The RUBBER AGE

The Only Twice - a - Month Rubber Publication

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UNITED STATES RUBBER SALES IN FIRST HALF LESS THAN 1923

Gross Sales of $77,774,696 Are Reported for First Six Months of 1924, a Decline of $9,935,509 from Sales Reported for Same Period in 1923—Equal to $2.05 a Share

The semi-annual statement recently mailed to stockholders of the United States Rubber Co. shows, for the first six months of 1924, gross sales of $77,774,696, a decrease of $9,935,509 compared with the same period last year. Net income before interest deductions but after all other charges, including reserves for depreciation, is reported as $7,510,415. Interest on funded debt amounts to $2,360,000 and other interest aggregates $727,728, making total fixed charges of $3,087,928. After this item was deducted net profits were $4,422,487, equal, after preferred dividends, to $2.05 a share on the $81,000,000 common stock outstanding.

Mr. Seger's Statement to Stockholders

In his statement to stockholders, C. B. Seger, chairman, says that "the seasonal nature of the Company's business necessitates accumulating stocks in the first six months of the year to meet heavier shipments to be made during the remaining months. This results in inventories being at their highest point about the middle of the calendar year."

Mr. Seger also points out that the decrease reported in sales for the first half was due in part to lower selling prices, but principally to general business conditions. He says the tire business of the company has shown very substantial improvement, and, in spite of materially lower prices, the results for the first six months have more than justified the hope expressed in the annual report for last year. The outlook for a continuance of this improvement is very encouraging, according to Mr. Seger.

The statement continues "As of June 30, 1924, current assets amounted to $127,116,000 as compared with $125,058,000 as of the close of last year, an increase of $2,058,000. The current assets consisted of $50,017,000 in cash and accounts receivable, and $77,099,000 in inventories of finished goods and raw materials. Current liabilities amounted to $53,492,000 as compared with $50,438,000 as of the close of last year, an increase of $3,054,000. The current liabilities consisted of $40,160,000 in Bank loans, and $13,332,000 in current accounts payable, including acceptances for importations of crude rubber, and accrued liabilities. The funded debt has been reduced $947,000, since December 31, 1923, by the retirement of $767,000 of the Company's First and Refunding Mortgage 5% Gold Bonds, and $180,000 of its 7½% Gold Notes, through the operation of the sinking funds."

CONTENTS

NEWS SECTION

Tells of Rubber State Revolt . 412
Name Field for Seiberling . . . 415
Stevenson Plan Partial Success 417
Dunlop Opens Branch 419
Wembley Show Open in 1925 . 419
Ask $350,000 for Propaganda . 420

FEATURES

Manufacture of Rubber Gloves . 422
Rebber Trade Terms 424
Vulcanization & Accelerators . 426

MARKETS

Cottons and Fabrics 429
Crude Rubber 431
Chemicals 433

R.A. ADOPTS SYMBOL FOR RADIO RUBBER

Rubber Association Specifies Quality Standards for Hard Rubber for Radio Use and Adopts Symbol to be Used on Panel Containers by Members who Co-operate.

Buyers of hard rubber radio panels are now protected against inferior materials. The Rubber Association of America, Inc., has adopted stringent quality standards for hard rubber radio panels, as well as a special diamond-shaped symbol which will appear on panel containers to indicate that the panels meet the Association's standards. This special symbol may be used only by manufacturing

members of the Rubber Association whose panels conform to those requirements.

This action by The Rubber Association of America, Inc., solves a very troublesome problem. Hard rubber of inferior quality, much of it never intended for radio use at all, has flooded the market since the very first days of the radio, much to the detriment of the hard rubber product really meant for radio work.

Hard rubber of the proper qualities is so perfectly suited for radio work that it has been the material to which radio enthusiasts—both amateur and professional—have naturally turned. But the presence in the market of quantities of low-grade hard rubber has confused the situation, and there has been little to aid a buyer in distinguishing good hard rubber panels from bad. By consenting to take a part in specifying proper quality standards for hard rubber panels, the Association has clarified the situation.

The leading hard rubber manufacturers of the United States are associated in this movement to protect the public from inferior materials. Consequently, purchasers will find it easy to avoid unsat-

(Continued on Page 412)

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EYE WITNESS TELLS OF RUBBER STATE REVOLT

Confirming the rumors of a revolution in the rubber provinces of northern Brazil published in the last issue of THE RUBBER AGE, an American official, who has just returned from the affected area, supplied the first details.

"The revolution is led by state troops and clerks who have not been fully paid in months," he said. "State soldiers after throwing Acting Governor Monteriro at Manaos, capital of Amazonas, were driven from the city by federal troops. The federal army commander has established a military government and so far as I know is still standing Manaos against the rebels."

A rigid censorship has completely suppressed all news of the rebellion which began July 25.

According to the Booth American Shipping Corp., New York, disturbances at Manaos have interrupted navigation on the River Amazon. In a recent statement, it was said that the company could not guarantee the delivery of cargo for Manaos or Iquitos or for any place in the Amazon region beyond Para.

Litigation Over Tire Contract

The Rubber City Clearing Co., Akron, Ohio, filed a motion in the Supreme Court at Columbus to direct the Summit County Court of Appeals to certify the record in the case filed by George D. Bates, trustee in Bankruptcy for the creditors of the Portage Tire & Rubber Co. The case involves a judgment of $135,000.

The clearing company had contracted with Portage to take and sell all "seconds." It was stated in the complaint that during the depression of 1920 Portage loaded up Rubber City Clearing Co. with a great quantity of "firsts" disguised. The clearing company refused to take any tires but "genuine seconds."

Mr. Bates sued before Judge Scott B. Kenfield. The jury was directed to find in favor of the clearing company, holding that the contract was not enforceible. The Court of Appeals reversed the judgment and sent it back for a new trial, holding that Judge Kenfield had erred in directing the verdict. The Rubber City Clearing Co., seeking to have Judge Kenfield's ruling hold, wishes to have the Supreme Court pass on the question.

Marathon Plant to be Sold

Under an order of the U. S. Court, the plant of the Marathon Tire & Rubber Co., Cuyahoga Falls, Ohio, will be sold on Sept. 22. The plant is equipped to manufacture 600 tires and 1000 tubes a day and can also make belts and other pressed goods in quantities.

The sale will include six acres of land in Cuyahoga Falls, with buildings and equipment. The trade mark "Marathon," and other trade marks, goodwill, patents, tread designs and minor items specified in the decree and order are not included in this sale. Walter H. Jenks is receiver for the company.

MICHELIN ANNOUNCES MILLIONTH BALLOON

The Michelin Tire Co., Milltown, N. J., recently announced that it has produced a million balloon tires.

"Experience has now proved," said J. Hauvette Michelin, "that low-pressure balloon tires give at least as much mileage as high pressure tires; that they puncture less than ordinary tires, and that they give a degree of riding comfort which motorists will not do without once they have enjoyed it."

The Michelin company is continuing the manufacture of high pressure tires but foresees the day when the use of balloon tires will be universal.

GAIN OF 158 PER CENT SHOWN IN RUBBER WAGES

A gain of 158 per cent in wages paid to employees in rubber factories in the past ten years from July, 1914 to July, 1924 is shown in a study of labor wages made by the National Industrial Conference Board, New York. The board reports that in 23 leading manufacturing industries covering, on the average, 700,000 employees wages shown an advance of 127.3 per cent. Taking the relation of the changes in earnings to the change in the cost of living from the common base of July 1914, the figures show that the wage earner in these industries is 27 per cent better off today than he was in July, 1914.

The drop in the cost of living from the high peak of 1920 has been considerably greater in proportion than the drop in wages from the same high peak. Consequently, the purchasing power of the dollar is greater than it was.

For purposes of comparison with the 158 per cent gain shown in rubber wages, the hourly wage increases in some of the manufacturing industries may be noted: 122 per cent in the automobile industry; 141 per cent in iron and steel; 125 per cent in boots and shoes; and 166 per cent in northern cotton mills.

Less striking but of considerable significance are the changes in employment and hours of work. Employment in identical manufacturing plants throughout the period advanced 12 per cent between July, 1914 and June, 1924. This is a remarkable indication of expansion when it is remembered that employment in June of this year was at a low ebb, being 25 per cent lower than in June, 1920.

Coolidge Receives Firestone

President Coolidge received Harvey Firestone, president of the Firestone Tire & Rubber Co., his son, Russell, and his friends Thomas A. Edison and Henry Ford on August 19 at the Coolidge homestead at Plymouth, Vermont. The rubber magnate and his friends, who were on a camping trip, called on the President to pay their respects.

R. A. ADOPTS SYMBOL FOR RADIO RUBBER

(Continued from Page 411)

isfactory goods by buying hard rubber panels which bear the individual maker's trade-mark and are sold in containers carrying the quality symbol of The Rubber Association of America, Inc.

The Hard Rubber Manufactuers Division of the Rubber Association has adopted specifications covering absorption, volume resistivity, phase difference angle and dielectric constant. These are the major qualities which determine the suitability of any radio panel for its particular work. Hard rubber excels all other insulating compounds in these properties. Consequently, the purchase of hard rubber radio panels which meet the Association's quality standards assures all of these advantages to the radio enthusiast.

H. H. Henderson Incorporated

H. H. Henderson, Inc., New York City, has been granted a charter. Authorized capital is $10,000. The firm will deal in crude rubber. H. H. Henderson, 149 Broadway; J. B. Baer and Maurice Brandt, 2 Rector St., are directors and subscribers.

Offices have been opened in the Singer Building, 149 Broadway, New York City. Mr. Henderson recently resigned as vice president and director of F. R. Henderson & Co., Inc.

B. W. Henderson in Business

Bancroft W. Henderson, Inc., have opened offices in the Fisk Building, 250 West 57th St., New York City, where they will engage in crude rubber brokerage. Bancroft W. Henderson recently resigned as vice president and treasurer of F. R. Henderson & Co., Inc.

Receipts at Boston Increase

Since a delegation from the Rubber Association of America visited Boston as guests of the Maritime Association, a marked increase in receipts of crude rubber at the port of Boston has been noted. Rubber destined for Akron, however, is landed at Baltimore because that port enjoys a lower rail rate. There is a difference of 3 cents per hundred pounds in the freight rates to Akron in favor of Baltimore.

Cleveland Plants Busy

Two Cleveland, Ohio, rubber companies are increasing their capacity. The Aetna Rubber Co. is getting machinery in operation at the new plant purchased three months ago at Ashtabula and will soon have this plant turning out dipped goods, battery jars and small molded goods along with the production of the Cleveland plant.

Lindsay Wallace, president of the Goliath Rubber Co. of Cleveland, also announces plans for manufacturing more hard rubber parts. He reports that business is "excellent."

ANNOUNCE PROGRAM OF 13TH SAFETY CONGRESS

The program for its Thirteenth Annual Safety Congress, which is to be held at Louisville, Kentucky, Sept. 29 to Oct. 3, inclusive was recently announced by the National Safety Council.

The Rubber Section will hold two morning sessions at the Brown Hotel on Oct. 1 and 2. C. F. Horan, manager, Safety and Hygiene, Hood Rubber Co., Watertown, Mass., is chairman of the Rubber Section; E. L. Hewitt, United States Rubber Co., New Haven, Conn., is vice-chairman; and C. T. Wilson, Kelly-Springfield Tire Co., Cumberland, Md., is secretary.

Many Addresses to be Read

Reports of officers and committees and the appointments of the nominating committee will be received at the first session. They will be followed by addresses on "Dust Explosions in the Rubber Industry" by Fred S. Hoxie, Associated Factory Mutuals Fire Insurance Companies, Boston, Mass., and "Better Posture When Seated" by G. Raymond Tuttle, C. A. Cook Co., Cambridge, Mass. Following these two addresses an election of officers will be held.

At the second session on Oct. 2, addresses will be read by Dr. H. R. Conn, Goodyear Tire & Rubber Co., Akron, Ohio, on "Chronic Insidious Bone and Joint Disease as a Cause of Prolonged Industrial Compensation;" by A. W. Crooks, C. J. Cox Engineering Co., Cambridge, Mass., on "Proper Ventilation of Mixing Mills;" and by Robert J. Vane, Jr., Metropolitan Life Insurance Co.

A joint meeting of the Rubber Section and the Chemical Section will be held Sept. 30.

ANNOUNCING AN IMPROVEMENT

With this issue, readers of THE RUBBER AGE will find that more pages are devoted to the news of the rubber industry. Being a semi-monthly, it can render this *news* service so that timely *news* will be printed while it is still *news*.

It is known that the busy executive, department head, engineer, chemist and purchasing agent is especially interested in such newsy items because they summarize in a few concise words just those daily happenings in the vast rubber industry which are of the greatest interest.

For the advertiser, beginning with this issue, all advertisements will wherever possible be placed adjacent to reading matter, thus keeping up with the modern publishing tendency of giving the message of advertisers as much prominence as editorial matter.

THE RUBBER AGE is fortunate in having representatives in all the leading rubber centers of the world, including Akron, Boston, Trenton, New York, London, Paris and the Philippines. Thus the entire industry is efficiently covered. In addition, its semi-monthly feature assures the earliest presentation of all the worth-while news of the field.

Fisk to Pay Back Dividends

Those close to the Fisk Rubber Co., Chicopee Falls, Mass., expect the company to begin payments on account of back dividends due on $18,951,500 seven per cent cumulative first preferred stock, on which there had accumulated as of Aug. 1, 1924, a total of 22 per cent or $4,311,458.

The size of the payments with which directors will begin the reduction of the accumulated dividends on the first preferred stock has not been definitely determined. It is expected, however, that a dividend of at least $3.50 a share will be declared. This would be equal to dividends for six months. As the earnings of the company improve, it is planned to increase these payments.

Fisk, like most other well-managed rubber companies, is enjoying heavy tire sales. In July, following several months of comparatively poor business, tire sales began to increase in unexpected volume. As a result earnings for that month are understood to have been better than for any month during the past two years or more.

No Chemical Show in 1924

Owing to some confusion, which is believed to exist in a few quarters regarding the holding of the next chemical exposition, an announcement has been sent out by the International Exposition Company, under whose management the Exposition of Chemical Industries has been held since 1915. Numerous inquiries have been received by the management which lead it to believe that many interested parties are of the opinion that there will be a chemical exposition this year. This is not the case. There will be no chemical exposition in 1924, the next Exposition will be held September 28th to October 3rd, 1925, at the Grand Central Palace, New York.

RUBBER HEEL BURRS

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GOODRICH HAS INTEREST IN GERMAN RUBBER PLANT

Although the transaction was consummated two years ago, purchase of a quarter interest in the Continental Rubber Co., Hanover, Germany, has just been announced by officials of the B. F. Goodrich Co. The Continental plant is the largest rubber and tire company in Germany.

No statements regarding the amount involved in the purchase, the capacity of the plant or future plans have been made public. Nor has any information been given out as to the method employed in financing the deal.

This makes the fourth large Goodrich foreign subsidiary. The first was located at Paris to obtain a part of the French rubber business. The second was established in Yokohama but destroyed by the Japanese earthquake a year ago. Two years ago the Goodrich company bought a controlling interest in the Ames-Holden Tire & Rubber Co., Kitchener, Ont. Early this year a controlling interest was obtained in the Ajax Rubber Works at Leyland, Lancashire, England.

General Enlarges Factory

The General Tire & Rubber Co., Akron, Ohio, has begun the construction of three additional wings to its factory, in the hope that the work will be concluded in time to augment tire production within a few months. Just a year ago General added three factory wings, to take care of the growth of the demand for General tires, and a month ago a new power house was placed in operation. Orders have increased so steadily however, that it has been found impossible to take care of present business and future growth without still greater production, hence the work that is now being started. Present production is 4,000 tires a day.

The additions will increase the factory's capacity about fifty per cent. One new unit will be a mill room another three story wing will include a tire room. The third will be a saw tooth wing to take care of other operations. While this factory work is going on the company will also take steps to enlarge its general office. The cost of the improvements will be about a third of a million dollars.

At the same time that the building program is announced, General has notified its salesmen to take on no new dealers for the next two months. The Company has been behind orders all year and every effort is being made to assure present dealers of plenty of stock, until the factory additions are in operation to give relief. Following is a quotation from a letter of President William O'Neil to salesmen on the subject:—

"We believe you fully realize the necessity of confining shipments to our present distributors at this time. Our previous action in turning down all new business in March, April and May of this year and the completion of our new power house recently, enabled us to stay somewhat even with the requirements of our distributors, but we find that we have under-estimated the rate at which their demand is growing and it is again necessary for us to adopt the policy of restriction against new accounts."

The company makes it plain in its announcement that it has not departed from its established policy—that it is not taking on the business of car manufacturers, but that the sales which have made the most notable year in the history of the concern are based on consumer demand, through the dealer.

Excel Receiver Discharged

The receivership of the Excel Tire & Rubber Co., Wadsworth, Ohio, was ended recently when Judge McClure accepted the financial reports and discharged F. L. Lytle, receiver.

May Sell Interlocking Plant

The factory of the Interlocking Tire Co., Akron, Ohio, will probably be placed on the market in the near future, according to Stanley Delinger, trustee in bankruptcy. The original cost of the factory was in excess of $650,000 but it is appraised at only $40,000. Liabilities of the company are said to be more than $100,000.

A group headed by Edward Cole raised the first receivership and the present one is a result of operations by this group. For a time the plant was occupied by the Chemical Products Co.

U. S. EXPERT OBJECTS TO DUTCH RUBBER TAX

The expert sent by the United States Government to Dutch East India to investigate the opportunities for foreign capital in the rubber industry has sent home a report in which he raises objections to the Dutch East Indies tax legislation and the proposals for its revision. These taxes would make it extremely difficult for rubber companies operating in Dutch East India to meet the competition of Malacca and Ceylon. This information was given out by Dr. Gerritzen, minister for the colonies, at Amsterdam in reply to written questions by a member of the second chamber of the States General.

Dr. Gerritzen stated that the preliminary budget for Dutch East India for 1925 would authorize the replacement of the present complex of taxes on companies working in Dutch East India by a proportional tax on profits. He was of the opinion that the new tax would lessen competition of Malacca and Ceylon and improve the chances for investment of American capital.

Clapp Rubber to Build

The E. H. Clapp Rubber Co., Hanover, Mass., has contracted with the Morton C. Tuttle Co. to design and construct several buildings to replace those that were destroyed by fire. The contract also calls for considerable alteration work.

Wide World Photos

Utilizes Old Tubes in Making Bags

Charles Haskell, of Boston, Mass., is shown above with his imitation "doeskin, buckskin and cowhide" handbags which he makes from discarded inner tubes. By using gray and red tubes in combination he obtains some very striking effects.

Athletic Field at Goodyear Named for C. W. Seiberling

Vice President of Seiberling Rubber Co. Honored on Labor Day by Goodyear Tire & Rubber

Charles W. Seiberling, vice president of the Seiberling Rubber Co., Barberton, Ohio, was signally honored on Labor Day when employees of the Goodyear Tire & Rubber Co., which he served for years as vice president, dedicated Seiberling athletic field in his name. A great boulder bearing a bronze tablet was unveiled at the entrance of the field by Paul W. Litchfield, vice president of the Goodyear Co.

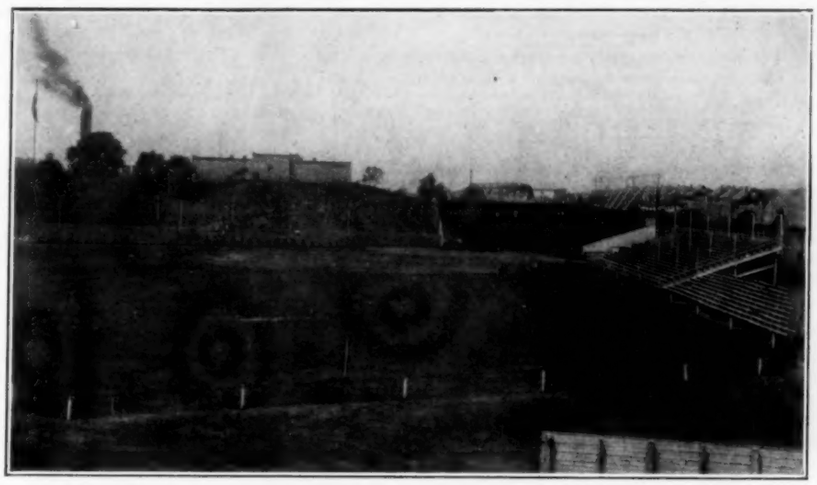
The proposal to dedicate the field, which is probably the most elaborate industrial athletic field in the country, to C. W. Seiberling originated with the members of the Goodyear Service Pin Association, men and women who have been five years or more with the company. The memorial boulder was selected by Athletic Director Ed Conner, Fred Colley, Fred Climer, H. L. Matti, and F. H. Hersh, secretary of the Service Pin Association.

C. W. Seiberling

Members of the Goodyear Friars, Three Arts Club, Goodyear "Silents," Green Room and Musical clubs who owe their organizations largely to the efforts of "C. W." participated in the dedicatory ceremonies together with the boy scout troop from the Summit County Children's Home of which Mr. Seiberling is a troop committeeman.

A big parade in which were many beautifully decorated floats opened the day's festivities, and following the formal dedication came athletic contests and a race in which three big Goodyear balloons participated. The big gas bags were in charge of Lieuts. Clyde Kuntz and Max Moyer, Major N. W. Peek, and Pilots C. K. Wollam, Wade T. Van Orman and John A. Boettner.

The field, which has always born his name, will be a merited memorial to a man who is admired and genuinely loved by his associates in all walks of life.



Seiberling Athletic Field at the Goodyear Plant

Hannibal Rubber Bankrupt

The Hannibal Rubber Co., Hannibal, Mo., has been declared bankrupt. The company manufactures Mark Twain cord tires. Assets are listed at $364,502. and liabilites at $33,326. In the assets, the value of the property and buildings is given as $187,000.

Columbia Tire Prosperous

According to a statement recently issued by Samuel Isaly, general manager, the Columbia Tire & Rubber Co., Mansfield, Ohio, is enjoying the best business in its history. Production is being maintained on a 24-hour basis, with 250 hands. The monthly payroll aggregates $30,000. The daily output is 1,200 tires and 2,000 tubes. Production includes cord, fabric and balloon tires.

It is said that orders in hand will carry the present operations well into the late fall.

Barclay Agents for Tofft

The Barclay Chemical Corp., 154 Chambers St., New York City, recently announced that it had been appointed the exclusive selling agents in the United States for John Tofft & Co., Hamburg, Germany. The Tofft company is known throughout the trade for its fair dealings. The appointment of the Barclay corporation as its agents puts the latter in a better position to serve the trade on all industrial and fine chemicals.

THE VULCANIZED RUBBER CO.
Manufacturers of
HARD RUBBER GOODS
of Every Description
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Entire freedom from bead trouble in the construction of straight side tires is assured by the use of either National "(Patent)" High Tensile Strength, Flat Woven, Bead Braid or our new (Pratt Patent) Bead Cables. These cables, made to dimensions specified, have seven strands, yet only one piece of wire is used without soldered, welded or brazed joint.

Write for working samples of either National flat braid or Pratt cables (no charge to tire manufacturers) and full information as to our products and service.

Our engineering department tests beads and furnishes complete confidential reports as to their stretch, set and bursting point, without charge. Inquiries solicited regarding this special service.

National Standard Company
Niles, Michigan

EXPORTS OF CANADIAN RUBBER GOODS LARGE

United Kingdom and Argentina Principal Markets for Footwear, which Constitues about One-Fifth of Total—Balance is Belting and Automobile Supplies.

Canadian exports of manufactured rubber goods which reached the high level of $1,024,205 in March, 1924, declined to $618,355 in April, and advanced again to $890,545 in May, according to P. L. Palmerton, chief of the Rubber Division, Department of Commerce. This trend was general for all classifications, though exports of inner tubes, solid tires and belting in May exceeded those of March. Exports of tubes in May were valued at $92,773 as compared with $59,845 in April, and $80,554 in March; solid tires, $15,710 in May, $14,928 in April, and $15,026 in March; and belting $40,821 in May, $28,859 in April, and $33,944 in March. Exports of pneumatic casings declined from $576,248 in March to $327,676 in April, and advanced to $536,130 in May. The value of canvas rubber soled shoes exported in March was $215,757; April, $128,029; and May, $134,789. Other rubber boots and shoes exported were valued at $42,734 in March, $26,807 in April, and $28,401 in May. April, May and June are normally the dull months in the export trade in waterproof rubber footwear both for the United States and Canada.

32,830 Pneumatics Exported in April

Of the 32,830 pneumatic casings exported in April, 7,421 went to the United Kingdom, 5,400 to Brazil, 4,578 to British South Africa, 3,059 to Australia, 2,228 to the Dutch East Indies, and 2,207 to New Zealand. The United Kingdom took 34,103 of the total 59,757 pneumatic casings exported in May; New Zealand 9,718; Argentina 1,870; Belgium 1,805; Australia 1,598; and the Dutch East Indies 1,291. Pneumatic tubes during May were consigned chiefly to the United Kingdom, 29,699; Argentina, 11,135; France, 7,471; and New Zealand, 7,427. Belgium, the Dutch East Indies, Australia and the Netherlands being other important markets. Solid tires went principally to the United States 147; Dutch East Indies 146; Straits Settlements, 145; and New Zealand, 48.

The United Kingdom and Argentina continue to be the largest markets for canvas rubber-soled footyear, 70,934 pairs having been shipped to the former in May and 53,100 pairs to the latter. British Guiana took 10,904 pairs; the British West Indies, 21,174; and British South Africa, 4,910 pairs. The principal markets for rubber boots and shoes were the United Kingdom, Newfoundland, New Zealand, and Australia. British South Africa took 36,517 pounds of rubber belting, over 50 per cent of the total May exports of 70,168 pounds, other important markets being Argentine, 8,188 pounds; New Zealand, 4,981; United Kingdom, 4,671; and Australia, 4,177 pounds. Rubber hose to the value of $1,507 was shipped to Cuba; $1,436 to Newfoundland; $988 to British West Indies; and $587 to British South Africa. The total exports of rubber clothing were valued at $4,517, of which $3,331 went to St. Pierre and Miquelon and $1,043 to Australia.

Good Outlook for Eclat

The business outlook for the remaining months of 1924 is excellent according to a report issued by Eugene F. Ast, secretary and treasurer of the Eclat Rubber Co., Cuyahoga Falls, Ohio, which manufactures much of the radiator hose used by American automobile manufacturers. The Eclat factory has 110 men on its roster, working maximum production in ten-hour shifts. Rumors that the Eclat company intended to remove its factory from Cuyahoga Falls were dispelled by Mr. Ast, who explained that the rumor started when work of remodeling and improving the company's plant at Kent. Work will be carried on in both cities, explained the secretary.

Plan to Operate Paul Plant

The stockholders of the Paul Rubber Co., Salisbury, N. C., recently appointed a committee of seven to devise ways and means for reorganizing the company and taking over the plant, now being operated by a trustee named by the court.

The committee, which is to report at the next meeting of stockholders, is composed of Attorney Grant, H. A. Holshouser, W. L. Barre, W. D. Turner, W. E. McWhirter, A. Johnston and Hayden Clement.

RESTRICTION OF MINOR IMPORTANCE IN CRISIS

London Quarterly says Last Quarter has been a Period of Disappointment for Rubber Trade—Trace Blame for Unsatisfactory Conditions to Lack of Demand.

"For almost everybody connected with the rubber trade the July quarter of 1924 has been a period of disappointment and anxiety," says the current issue of the *Rubber Quarterly*. "Not merely has a stable and remunerative price-level proved impossible of attainment but quotations have fluctuated in a manner reminiscent of the critical days of 1921-22. During June, for instance, they fell, in a period of three weeks, from 1s ¾d to 9¾d, and though succeeding weeks witnessed a certain amount of recovery, and the 1s level was regained by the middle of July, the average for the quarter is, roughly, 11d against 1s 1d in the April quarter and 1s 1¾d in the January quarter.

Stevenson Scheme Powerless

"The exportable percentage of standard rubber production in Malaya and Ceylon falls in consequence from 60 to 55 for the forthcoming quarter. That, after twenty-one months of operation, the Stevenson scheme has proved powerless to maintain rubber prices at so modest a level as 1s in the face of subversive influences, which, though powerful, were not beyond human foresight, is certainly calculated to provoke some amount of apprehension among those who pinned their faith to it.

History Will Discount Plan

"It is difficult to take an unbiased view in a matter which will probably remain the subject of keen controversy for years to come, but it seems fairly safe to say that in the rubber 'crisis' of 1924 restriction has been a factor of minor importance. The market has been constantly under speculative influence, highly nervous and liable to be disproportionately upset whenever the holding-off policy of buyers caused weak holders to liquidate comparatively small stocks. In other words, the unsatisfactory features of the last quarter must be ascribed, not to an increase in production, but to a definite falling off in demand."

The Carter Bell M'f'g Co.
Highest Grade
RUBBER SUBSTITUTES
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150 Nassau Street New York

Est. 1900 Inc. 1919
THE KUHLKE MACHINE CO.
Formerly Jones & Kuhlke
AUTOMOBILE TIRE MOLDS and CORES
GENERAL MACHINE WORK
Akron, Ohio

SAYS STEVENSON PLAN IS PARTIAL SUCCESS

National Bank of Commerce Publication Says Growers have been Discouraged by Low Prices—Expects Production to Decrease and Consumption Increase.

As almost no new acreage has been planted with rubber, owing to low prices, it is expected that consumption will increase to an extent sufficient to make the supply a critical question as the only increase in production will come from the increasing yield of trees already bearing. The yield of these trees will be insufficient to keep pace with the growing demand. This is the belief expressed in an analysis of the rubber situation in the current issue of *Commerce Monthly*, published by the National Bank of Commerce in New York.

"Further restriction of the exportable allowance of crude rubber from British plantations and greater demands from manufacturers have brought about renewed activity in the crude rubber market during the past month, with a sharp upturn in prices from their recent low levels. An average price in London of less than one shilling a pound during the quarter ended July 31 caused a reduction in the exportable allowance of British plantations from 60 per cent to 55 per cent of normal production, under the Stevenson Plan of regulating exports. While the reduction was not officially announced until July 31, it was expected, and was discounted for some time prior to that date.

"The action of the Stevenson Committee will reduce by 16,750 gross tons per year the amount of rubber which may be exported from British Malaya and Ceylon, from 201,000 tons per year to 184,250 tons per year. Moreover, if the average London price for the next quarter is not more than 1s. 3d. per pound the exportable allowance may be reduced by still another 5 per cent and this may be repeated each quarter until the average price for the quarter is at above 1s. 3d. Exports cannot be increased until the average price for the quarter is at least 1s. 3d.

"The Stevenson Plan became effective November 1, 1922. In anticipation of the Plan's going into effect and within a short period afterward prices of crude rubber doubled, gradually shading off again during the latter part of 1923 and the first half of 1924. The effectiveness of the Plan has been to a considerable extent nullified by the refusal of Dutch growers to come into it and by the lack of cooperation on the part of native growers. Only 71 per cent of the total area planted to rubber is in British territory while 25 per cent is in Dutch territory. In 1923 actual production per acre in bearing was 374 pounds in the Dutch East Indies, while in British Malaya it was only 264 pounds and 270 pounds in Ceylon."

Concluding the bank says. "Unsatisfactory prices for rubber during the past four years have discouraged new planting and caused apprehension in regard to the world's future supply."

World's Largest Pneumatic Tire

The largest pneumatic tire in the world, shown in the above photograph, was recently manufactured by the B. F. Goodrich Co. Placed in the window of the Akron branch, it has become an object of great interest to passersby. The tire is 64 x 14, weighs 105 pounds, and stands as tall as the average woman. It has a sustaining capacity of 20,000 pounds. The total weight of the wheel assembly on which these tires are installed is 300 pounds. The giant tubes, which will be used in tires of this size, have an inflation pressure of 75 pounds. This is the first tire of this size to be built by the Goodrich company for the United States Army Air Service.

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Baby Pants	Hose Supporters	Dress Protectors
Crib Sheets	Household Aprons	Sanitary Goods

RESTRICTION MAY ADD TO PLANTERS' COSTS

Stevenson Plan May Defeat Own Purposes by Increasing Costs of Planters—All Hope of Gaining Dutch Co-operation Gone, Says British Commercial Agent.

(Special to THE RUBBER AGE*)*

As was anticipated, in the second quarter of the year just concluded the "spot" price of rubber in the London market did not reach an average of 1s. (about 24c) per pound, the actual level for the period working out at 10.947d. (about 21c). The operation of the restriction scheme has now been carried one stage further, as under the terms of the enactment the quota permitted to be exported at the minimum rate of duty is reduced from 60 per cent of standard production to 55 per cent until the end of October. In the year and three-fourths during which restriction has been in force the course of market values has been such as to cause a regular 60 per cent quota with the exception of one quarter at 65 per cent. The low prices ruling during the past three months has, however, brought into force the provision which makes for a reduction of 5 per cent in each quarter until the necessary average of 1s. 3d. (30c) is secured. Should the present reduction not prove effective exports will be reduced to 50 per cent on November 1. The extent of such curtailment in supplies may be guaged from the fact that were a further reduction to 45 per cent to follow, exports from the restricted areas would be less by approximately 24,000 tons during the nine months.

Reduction Had been Discounted

All through the past few weeks the process of discounting the reduction was continued in the commodity market, which gave marked indications of renewed strength, accompanied by a recovery in the "spot" price to 1s. 0 9/16d. (25c) per pound. Speculative buying has been a factor while purchases by market operators on this side and in the United States have been made to cover short sales. It is possible that American buying has been influenced by fears that a settlement of the Reparations problem would lead to a rally in sterling on New York. In contrast, the share market has simply marked time around the improved quotations reached in the recent upward movement, and it is thought that the pause in the recovery may be associated with the recognition of the fact that, while the lower quota may produce better prices for the product, the reduction in the crops harvested by the companies will accentuate the tendency of increasing costs, and it remains to be seen whether a further advance in commodity prices sufficient to offset this development will ensue.

Natives Benefiting by Restriction

That the native producers in the Dutch East Indies are cashing in on the restriction scheme by planting millions of young rubber trees regardless of consequences, is the assertion of H. A. N. Bluett, British Commercial Agent for the Netherlands East Indies, who has recently made a commercial tour through the rubber-growing districts. In a report to the Department of Overseas Trade Mr. Bluett says there are millions of young trees which have not yet reached the producing stage, but which will come into bearing during the next two or three years, and as long as there is a market for native-grown rubber the natives will continue to plant more and more trees. Mr. Bluett is prepared to state that in less than ten years rubber will be exported from all parts of Sumatra much in the same way as copra is today, and that in less than five years the export of native-grown rubber from the Dutch East Indies *will exceed that of plantation rubber* and be produced at half the cost. He says that the women in Sumatra are the laborers, and a man who has been able to procure three or four wives can spend his lifetime squatting in front of his house smoking endless cigarettes, and driving from village to village in his Ford. The native planter asks for no life more ideal than this.

The greatest chance of success the Stevenson scheme had was by gaining Dutch co-operation, but with the state of affairs described by Mr. Bluett it seems that this will never be gained. The statement of opinion of the sponsors of the restriction scheme upon Mr. Bluett's report will be watched with interest—if they make one.

LATEX TANKERS NEEDED IN SUMATRA

In the opinion of A. H. N. Bluett, British Commercial Agent in the Dutch East Indies, there is a need for gasoline-driven tankers in Sumatra. He believes that when factories are erected at central points the tankers will prove of great help. The roads in Sumatra are in a fair condition and are being steadily improved.

INDIA-RUBBER JOURNAL CELEBRATES 40th YEAR

The August 2 issue of the *India-Rubber Journal*, London, Eng., was a weighty volume for it marked its 40th year of publication. The big issue was bound in a heavy, brown cover and was sold for 2/. Many articles of unusual interest dealing with the past and future of the rubber industry were contributed by leaders in the British trade. The entire issue was printed on an excellent quality coated paper upon which the many illustrations showed up to fine advantage.

Maclaren & Sons, Ltd., the publishers, are receiving the congratulations of the trade throughout the world on this splendid issue. THE RUBBER AGE hastens to add its felicitations.

Goodyear Calls for Employees

Two Akron rubber factories are reported to be making plans to increase their capacity in the immediate future, although officials were not yet ready to issue definite announcements. Following the announcement by the B. F. Goodrich Co. that more skilled labor was needed, the labor department of the Goodyear Tire & Rubber Co. has sent out cards soliciting additional help. F. D. Yoak of the labor department believes that 4,000 employees will be hired in the Akron rubber factories within the next month as the demand for tires seems to be steady and coming from consumers. It is said that dealers cannot get enough tires to supply the present demand.

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WEMBLEY EXHIBITION TO BE OPEN IN 1925

Show will Close on October 31 but Will Re-open in the Spring—Exhibits Being Changed almost Daily—Rubber Vases Attracting Much Interest.

(Special to THE RUBBER AGE*)*

If there had been any shred of doubt remaining that the rubber industry is receiving the greatest advertisement in its history at the Empire Exposition at Wembley, it has been cast aside by the official decision to keep the show open for another year. In no way was this decision of the exposition authorities an arbitrary one, but was only arrived at after consultation with the leaders of all the exhibiting industries. So satisfied have they been with the results up to the present that an overwhelming majority were in favor of the extension. The Wembley Exhibition will, therefore, close as arranged on October 31 and, after a complete overhauling during the winter when many new features will be introduced, re-open in the spring of 1925 and continue into the fall.

Exhibits Changing Almost Daily

Changes are noticeable daily at Wembley. Old exhibits are constantly being withdrawn and new ones as constantly replacing them. One exhibit of special interest recently observed was a group of perfectly designed jars and vases in the British Guiana Pavilion. They suggest the finest examples of pottery from Egypt or the earliest days of Greece. But the attendant surprises one by taking up the jars and throwing them on the floor. They bounce high into the air and can be caught undamaged. These jars, which look for all the world as if they were delicate, as most jars seem to be, are an example of the art of British Guiana, where the natives make dishes and pots out of the sap of a species of rubber tree. The raw sap is white, but with the addition of pure dyes, extracted from tree bark, this bouncing pottery is colored and made very beautiful.

Another very interesting display at Wembley is now taking place in the Civic Hall. This hall is occupied by each of the most important industrial cities of Great Britain for a period of two weeks. At present Salford is in occupation. This city has played a conspicuous part in the development of rubber manufactures and it is estimated that some fifty firms in the neighborhood are engaged in processes connected with rubber, about 75 per cent of the rubber trade of the country being carried on there. Between 15,000 and 20,000 people are employed, principally in that section of the industry devoted to waterproof fabrics. One of the exhibiting firms, the Irwell & Greengate Rubber Co., Ltd., has presented the Prince of Wales with a fine pair of plantation crepe sole golf shoes. The same firm is exhibiting novelties in the way of silk checks and shot silk lining effects, produced by printing aluminium powder or colored aluminium powder, on the rubber surface of the waterproofed cloth.

Studebaker Wulff Plant Open

The Studebaker Wulff Rubber Co., Marion, Ohio, which acquired factories at Wadsworth and Carey, Ohio, some months ago, recently started production in the Carey Plant. The capacity of the plant is 500 tires a day and it is the intention of the officials of the Company to increase production as rapidly as possible.

An increase in demand is reported from the Marion and Wadsworth plants, the daily output ranging from 900 to 1,000 tires. Officials of the company announce that net earnings for the month of June were four times interest requirements on bonds and on dividends for all outstanding preferred stock, with July a banner month in sales.

Rubber Corporation Loses Suit

Judge Bodine in the United States District Court has upheld the decision of Master in Chancery John M. Emery in denying the petition of the Rubber Corporation of America, Delaware, N. J., for the continuance of its contract with the defunct Empire Tire & Rubber Co., Trenton, N. J.

Before the bankruptcy of the Empire company, the Rubber Corporation held a contract to market a portion of the tire output. In the action, the Rubber Corporation sought to have the contract continued with the reorganized company.

DUNLOP OPENS KANSAS CITY SALES DIVISION

The eleventh Dunlop sales division has been opened in Kansas City, Mo., according to recent announcement by E. H. Kidder, general sales manager for the Dunlop Tire & Rubber Company, Buffalo, N. Y. It will serve merchants in parts of Missouri and Montana, and in Iowa, Kansas, Utah, Wyoming, Colorado and Nebraska.

Charles P. Stearns, who for some time

Charles P. Stearns

has been associated with the direction of home office sales, has been appointed divisional sales manager. He has organized a sales force and is now serving merchants in the territory who heretofore have been serviced by the Chicago division.

According to Mr. Kidder, Dunlop has contemplated opening a sales division in Kansas City for some months past. This rich farming country, with its heavy motor car registration, promises to be an excellent market for Dunlop in the opinion of its sales heads. With eastern and mid western sales outlets being served, it was decided to commence sales operations in Kansas City at once.

The opening of this new division gives Dunlop direct representation on a national basis, Mr. Kidder announces.

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RUBBER GROWERS ASSOCIATION ASKS $350,000 FOR PROPAGANDA

Contributions Requested to Carry through Work Already Begun —Ask Support of Producing Areas on Basis of Output—$150,000 to be Applied to Crepe Sole Propaganda

(Special to THE RUBBER AGE)

The further five per cent restriction of plantation rubber which, under the operation of the Stevenson scheme, automatically came into force at the beginning of August, has served as another reminder of the need for new outlets to absorb supplies. A great deal of attention has in consequence been directed to the new propaganda program of the Rubber Growers' Association. The propaganda fund is now exhausted and a sum of not less than $350,000 is required for the necessary expansion of work already undertaken and the development of new activities. The Federated Malay States Government has, in response to an appeal, approved an annual contribution for a period of three years of one-eighth cent (one-sixteenth cent U. S.) per pound on the understanding that one-half of the sum is to be set aside for propaganda in the Orient.

The Straits Settlements Government has made a contribution of £4,000 (about $20,000) annually for a period of three years, and the Kedah Government has contributed £2,000. British concerns in areas outside Ceylon and Malaya are being asked to guarantee contributions during 1924, 1925, and 1926, at the rate of 3s. (about 75c) per 1,000 lb. of rubber produced during the previous year—approximately equivalent to the rate suggested to the Eastern Governments—and it is proposed to call up not more than 50 per cent of the annual guarantee every six months. A request is also being addressed to non-producing concerns and others connected with the industry to support the scheme by subscribing definite annual sums. In view of the fact that the co-operative publicity scheme put forward last year was not accepted by the manufacturing interests, the intimation that the principle of co-operation is being more favorably received has been welcomed, and if the required amount becomes available it is proposed to allocate £20,000 ($100,000) in conjoint action in this connection, while £30,000 of the balance is to be applied for crepe rubber sole propaganda.

The problem of the menace of the native producers in the Dutch East Indies continues to receive serious attention. Opinions are markedly at variance as to the extent of future supplies from this source, which is to be expected, bearing in mind the absence of statistics of native acreage and other records. Last year there was a heavy increase and the statistics of foreign rubber imports into the Malay States (which consist largely of the native product) indicate that so far this year the increase has continued. However, the extent and potentialities of this source of rubber are so little known that any calculations are necessarily more or less guesswork. At the same time, the views of various authorities are of interest. G. G. Shrieke, the well-known visiting agent, in his report to the R.G.A. mentions predictions made by certain authorities that the 50,000 tons of native rubber produced in 1923 will increase to 150,000 tons within the next few years. On the other hand, the *N.I. Rubbertijdschrift* expressed the opinion that the native rubber cultivation in the Dutch East Indies had reached its maximum at 50,000 tons, as even at that quantity it was operating on self-destructive lines. A reassuring view is also taken by an experienced agricultural consultant, whom Mr. Schrieke quotes as stating that the fear of any greater production than about 50,000 tons has little chance of being realized. A good argument put forward for this theory is the system of "tapping to extermination" followed by the natives. It is asserted that 20 per cent of the native gardens in Sumatra had in January already run dry.

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To Occupy Addition Soon

The Wilson Rubber Co., Canton, Ohio, one of the largest glove manufacturers in eastern Ohio, will occupy its new $60,000 four-story factory addition within the next few weeks, it was said by officials.

The Wilson company is continuing to operate on a 24-hour schedule which has been maintained for some time. It manufactures all kinds of rubber gloves. Business on the books at the present time insures steady operation of the plant for months to come, according to officials. When the new addition is placed in operation it will mean an increase of approximately 35 per cent in production.

A considerable increase in business for the first six months of 1924 as compared with the corresponding period last year, is reported by the company.

Brigadier Rubber Incorporates

The Brigadier Rubber Tire Co., Akron, Ohio, organized for the sale of tires, recently incorporated with a capital stock of $12,500.00. R. P. Johnson and C. J. Johnson are the incorporators.

Keystone Tire Reports a Loss

The Keystone Tire & Rubber Co., New York City, for the six months ended June 30 last, recently reported a net operating loss of $149,128, after all general expenses. A deficit of $175,432 is reported by the company for that period. The general balance sheet on June 30, 1924, shows current assets of $536,496 and current liabilities of $39,127. The current assets included $169,532 cash, $39,228 bills receivable, $122,362 accounts receivable and inventory $205,373.

Lee Reports Loss for Quarter

The Lee Tire & Rubber Corp., Conshohocken, Pa., for the second quarter of 1924, ended June 30, reports net sales of $3,395,943 and a net loss of $39,347 after all expenses and charges. The company reports a profit and loss surplus of $2,106,050 as of June 30.

APPEAL TO FIRESTONE TO RELINQUISH CONCESSION

Although the Liberian Government has decided to prevent the wholesale emigration of negroes to that country as planned by Marcus Garvey and his followers in the Universal Negro Improvement Association, this will be but an incentive for more active work, says Garvey.

Learning that the Firestone Tire & Rubber Co. had recently received a concession of 1,000,000 acres of land in Liberia, the negroes will appeal to Harvey Firestone to relinquish this concession.

The negroes were recently in session at the fourth annual "International Convention of Negro Peoples of the World" at Liberty Hall in New York City.

Receiver for Spartan Rubber

A hearing was recently held before Judge Bodine in the United States District Court at Newark, N. J., on an order to show cause why Ernest C. Stahl, Jr., should not be continued as receiver for the Spartan Rubber Co., Yardville, N. J. The court ordered the continuation.

The receivership action against the rubber company was brought by Edward Horowitz, one of the stockholders. Judge Bodine appointed Mr. Stahl receiver July 22. The Spartan Rubber Co. is controlled by Newman Brothers, of New York, who took over the factory upon the failure of the Zee Zee Rubber Co., former owners.

Large Attendance for N.T.D.A.

Two thousand tire dealers are expected to attend the fifth annual convention of the National Tire Dealers' Association in Akron, Nov. 18 to 20, according to Arthur Roderick, secretary of the local branch of the national association. Delegates to the convention will be taken on trips of inspection through the various large rubber factories which consume 60 per cent of the raw rubber used in the United States.

Goodrich Opens Branch

The B. F. Goodrich Co., Akron, Ohio, has opened its depot at Columbus, Ohio, as a direct selling branch under the management of S. A. Cornell.

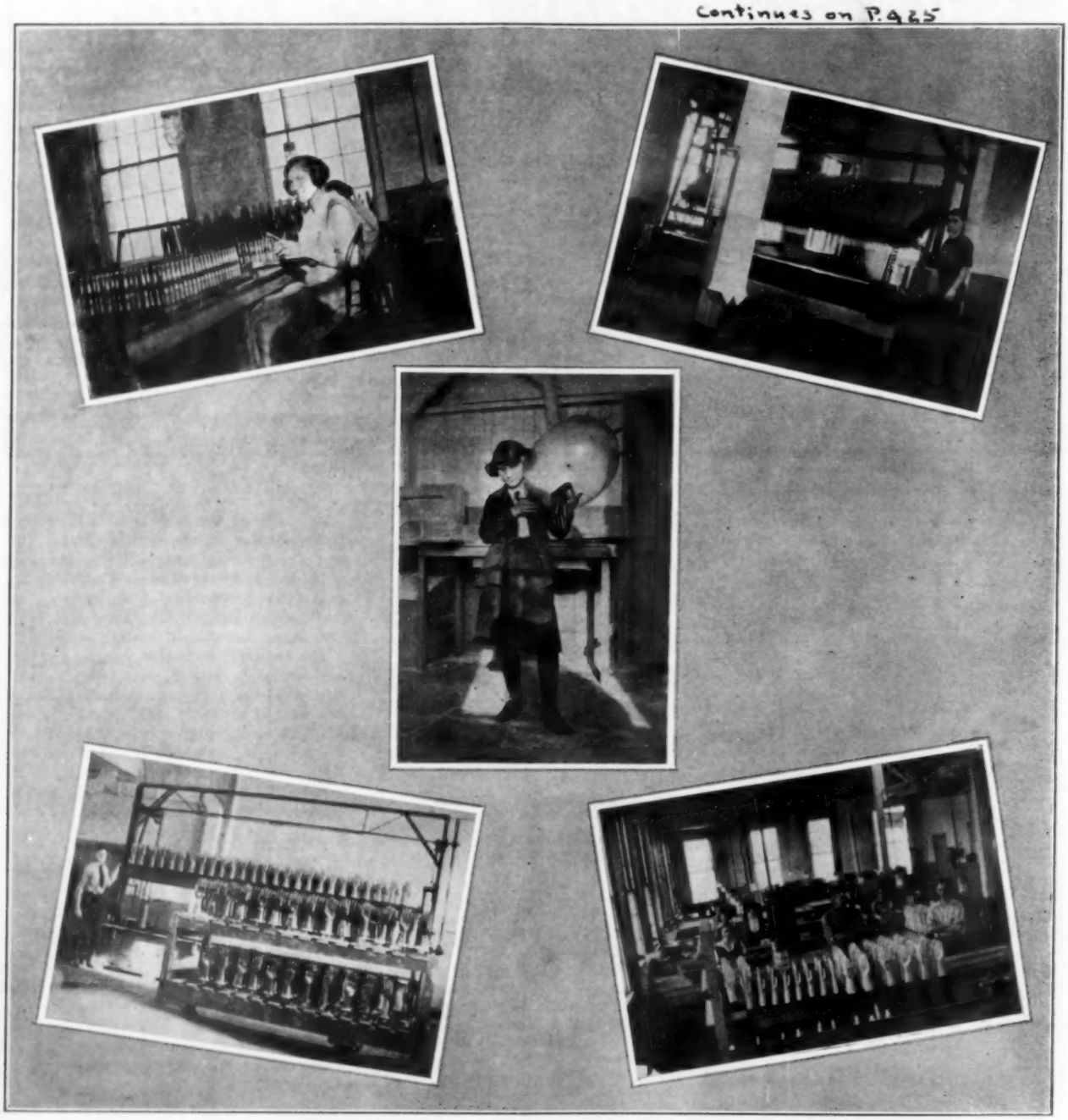
The Manufacture of Rubber Gloves

"Dipped" Method almost Universally Employed Produces Goods of Uniform Thickness — Finest Grades of Crude Rubber Used

By P. R. Wesley
General Manager, Davol Rubber Co.

NOT so many years ago, gloves for use of surgeons were made by hand of pure rubber cured by painting with an acid containing sulphur, such as carbon bisulphide, a tedious and costly process. The gloves answered very well, however, and in one hospital their use was continued long after the advent of the modern dipped surgeon's glove.

Continues on P. 965



Steps in Manufacturing Rubber Surgeons' Gloves *Courtesy Davol Rubber Co.*

Some of the operations in manufacturing rubber gloves by the "dipped" process in the Davol Rubber Co. factory at Providence, R. I. The quality of the product is illustrated by the picture in the center which shows a girl holding an inflated rubber glove.

Not only have generic names in all industries the freedom of trade terms but, in some lines of business, symbols and figures have attained to this same immunity from private monopoly. Thus there are lines where not only the word "Star" but the representation of a star is common property. Certain trade-mark specialists tell me that they foresee the time when this condition will obtain in the rubber industry. The chief anxiety at Washington is, however, to keep free of private padlocks the words and phrases that are trade terms essentially because they describe a given class of goods or particularize as to ingredients, composition of manufacture, pattern or model.

The "Scandinavia" case stands out as one of the most striking illustrations that a word which is merely descriptive of an article or the current name of an article or of a general character of business cannot be fenced off as the trade-mark of any one firm. This precedent was made possible because the Scandinavia Belting Company and Asbestos Rubber Works of America elected to carry to a U. S. Circuit Court of Appeals a difference of opinion on trade-mark rights. To the same end, the Court of Appeals at Washington, which acts as a sort of schoolmaster to the U. S. Commissioner of Patents, on one occasion told him that he may anticipate inevitable confusion in trade and refuse to grant a monopoly in a mark which is not only descriptive but contains the common trade-name of similar commodities in a general class of merchandise.

"Safety" and "Cushion" as Tire Terms

What happened recently with respect to "Safety" as a tire term only confirmed an earlier ultimatum to the same purport in the case of "Cushion" which the Motz Tire & Rubber Company undertook to use for trade-mark purposes in conjunction with a picture showing a tire depressed as it passed over an obstruction. The arbiter at Washington not only ruled that the word "cushion" was descriptive but that the picture which was used in conjunction with this meaningful word, was in itself the equivalent of a trade term since any manufacturer of rubber tires might desire to represent to the public in this way the use and the properties of his goods.

While we are on the subject of "Cushion" as a trade term, it is worth while to consider the special angle that was presented in a legal battle, a few months since, between the O'Sullivan Rubber Company and the Genuine Rubber Company. The O'Sullivan Rubber Company had, for more than twenty-five years, marketed a patented suction recess rubber heel marked in raised letters with the inscription "O'Sullivan's Safety Cushion Heel." When the patent expired, along came a rival with a similar product tagged "The Genuine Safety Cushion Heel." The Court had to rule in this case, as had been done on other occasions, that at the expiration of a patent the exclusive right to use the descriptive term by which the patented article has been designated also expires. But, taking into account the possibility of unfair competition in trade (quite apart from sheer trade-mark technicalities) the Court restrained the later user of "Safety Cushion" from using this ostensible trade term except it be displayed in such manner that the public would not mistake the output of one factory for the product of another.

"Rubberback" Refused Registration

The run-in of the Climax Rubber Company and the U. S. Compression Inner Tube Company over the word "Compression" but piles up evidence of the perils that attach nowdays to any attempt to isolate for the sole use of one firm a word that others in the industry have come to look upon as a trade term. The same moral is to be drawn from the failure of Goodman-Leavitt-Yatter Company to persuade the Patent Office to grant a diploma to "Rubberback" as a trade-mark for composite billiard-cloths made of a facing of pure wool secured by a film of rubber to a non-elastic textile fabric. In the estimation of the Patent Office censors it was not only plausible that "rubberback" should rank as a trade term in this particular line but that it might have other and diverse applications as a trade-term in other branches of the rubber trade and neighboring lines.

Although it was umpired more than a decade and a half ago, the memorable instance of "Ruberoid" always comes to mind when there is a discussion of the sanctity of the terms that savor of rubber. Contrary to common impression however, "Ruberoid" was not rejected because it had standing as a trade term. Rather did it meet its fate because it was "descriptive," which is sometimes but not always, the same thing as being a trade term. The court concluded that "Ruberoid" was nothing more than a misspelling of "rubberoid" and defined the latter as a common descriptive term signifying a resemblance to rubber in appearance or characteristics. It was the same sort of reasoning that impelled another court to deny to the Seamless Rubber Company the use of "Kantleek" as a mark for atomizers, fountain-syringes, face bags, ice-bags and water bottles.

Keep Eye on Future

That the trade-mark traffic officers not only have a wary eye for the private appropriation of words that have attained status as trade terms but will even look ahead to keep the path open for the trade terms of the future was revealed in connection with the effort of the United States Tire Company to take title to "Chain." When the U. S. Company made application for trade-mark credentials, the patent on the chain tread was in force, the U. S. Company being the holder of the patent. When the Patent Commissioner was called upon as referee he reasoned that the general public would naturally call the tires with the embossed chain "chain tires." Hence when other firms than the pioneer were free to make tires of this design they might all be expected to dub their products "chain tires" and there would become current a trade term which it would not do to have hobbled by a trade-mark registration to any one party. The Appeals Court backed up the Commissioner in this view.

Canton Market for Raincoats

The length of the rainy season at Canton, which extends from the first of April to the first of August, combined with other factors, has led to the increasing popularity of foreign style raincoats among the Chinese during the last few years. However, as in the case of many articles which the Chinese have imported from abroad at the outset, a larger and larger percentage of the present supply is made at Canton. Due mainly to the low cost of labor, the Chinese have found it cheaper to import the materials and manufacture the goods at Canton than to buy commodities which are made in America and Europe.

There are several features of the imported garment which do not satisfy Chinese requirements. For instance, the cuffs of the sleeves of an imported raincoat measure 14″ in circumference and are not wide enough to fit comfortably over the native dress, while the Canton-made coat has a sleeve of 18″ in circumference. The Chinese prefer a coat long enough to reach the shoe tops, and require breadth and roominess in the armpits. All the defects which the Chinese find in the American or British raincoat are remedied by the Canton manufacturer, and naturally the Chinese does not hesitate long between an article which suits his tastes and means, and one which is expensive and somewhat uncomfortable. Practically all of the raw materials used in the manufacture of raincoats at Canton are imported from England, though the transaction is not a direct one, as the Canton dealer buys his cloth, buttons, eyelets and thread from jobbers and importers at Hongkong, where stocks are kept on hand.

According to the Department of Commerce, rubber and waterproof coats at present are imported from England, the most popular varieties ranging in price from $10.00 to $17.00. Higher priced coats find practically no market. A few styles of waterproof silk and rubber coats retailing at $16.00 and up are kept in stock, but dealers report a limited sale; cotton waterproofs which sell at prices ranging from $8.00 to $13.00 are most in demand. Only light weight raincoats, with a minimum of lining, can be sold at Canton.

American manufacturers who contemplate entering the Canton market, should cater to local demands; the price must be low and the garment should be long and roomy, and otherwise meet the requirements of this market. Imports into China are subject in general to an ad valorem duty of 5%.

A list of Canton dealers in raincoats may be secured upon application to the Rubber Division.

Rubber Trade Terms Often Common Property

Expressions Usually Recognizable in the Industry as Common Trade Terms are Not Acceptable as Trade-Marks

(Written Especially for THE RUBBER AGE)

By Waldon Fawcett

TO so identify a rubber product or line by a word or a phrase that the mere sight of it by an ultimate consumer suggests a specific identity, is surely a grand and glorious thing. Only, it does not do for a rubber brander to choose for his "chop" (as the Chinese say) a bit of the language that is current in the industry as a trade term. This reminder is pertinent because a goodly number of rubber marketers have forgotten, lately, the admonition to lay off trade terms. Or possibly, they have not realized how stern is the ban. At any rate, they have been turned away disappointed when they sought to get trade-mark passports at Washington.

So as to put the text of the sermon into words of one syllable before we go looking for examples, be it said that Uncle Sam's logic is that the status of common property belongs to rubber trade terms that are used or are liable to be used indiscriminately by members of the trade. The government has not a word to say when a rubber man takes liberties with a trade-mark or employs in his own way any of the terms of specification that obtain in rubberdom. The situation is altogether different when trade-mark registration is asked. For, in issuing a certificate, the government is, in effect, confirming the brander's claim to a monopoly in his mark. Hence, the constantly increasing solicitude of the Federal officials lest one rubber marketer be granted the exclusive use of a designation that may be needed by rubber marketers in general to describe their goods.

This question of the common property rights of the industry at large in expressions that are generally recognized as trade terms has cropped up in rubberdom at intervals over a good many years. One of its earliest aspects had to do with a very interesting angle of the subject, viz, the right of the trade at large to use the name of an invention after the patent has expired. The principle that a patent name becomes a free-for-all trade term when the invention falls into the public domain has been proclaimed a good many times, notably in the case of Goodyear versus Goodyear in which it was held that the term "Goodyear Rubber" may not be exclusively appropriated after the expiration of the Goodyear patent.

That Uncle Sam is determined to keep open to all the standard vocabulary of rubberdom does not mean that there is any disposition to interfere with the use of words merely because they have place in everyday language, so long as they have not acquired a given signification in rubber circles. Thus, "Rainbow" which is a popular word was, in the case of Peerless versus Nichols declared to be a valid mark for rubber goods. The point was that rainbow is not one of the accepted terms of specification in the rubber market. Nobody needs to use that name to indicate the quality or form, size, or characteristics of a given class of rubber goods.

Going to the other extreme we find, in the recent experience of the B. F. Goodrich Company, indication of how the touchy trade-mark censors at Washington will exclude, on the charge of being trade terms, words that some of the men in the rubber field might not instinctively think of in that connection. In the Goodrich episode the term was "Safety" applied to pneumatic tire casings made of rubber fabric. The Commissioner of Patents and the Court of Appeals at Washington both held that in tire parlance "safety" has become descriptive—that is to say a trade term—indicating that a certain type of tire would not skid and might be used with approximate safety.

One change of considerable significance to the rubber trade has come latterly in that part of the administration of the trade-mark system which seeks to preserve trade terms as common property. It was formerly the doctrine that a rubber brander was free to adopt as his trade-mark any phrase or word that, at the time of adoption, was not already employed by another to designate the same or similar articles in the rubber line. That yet holds good with this modification that the trade-mark censors are inclined to conserve a new designation that it seems altogether probable will ere long be used broadly as a trade term rather than as the clue to any particular make of goods.

Continues on P. 423

Trade Terms as Trade-Marks

Trade-mark specialists advise care in selecting generic trade names or even words that are likely to become associated with the rubber industry when filing a claim for registration. The arbiters at Washington not only refuse to permit the use of words that have been in general use in the rubber industry and are readily connected in the public mind with the industry, but also have a wary eye on the future to guard against the appropriation of terms that are likely to become part and parcel of the trade. Such words often become by continued usage a part of the rubber trade vocabulary. They are not permissible as trade-marks.

Inasmuch as symbols and figures often rise to the distinction of generic trade terms by common use, these also may fall under the same ban in the future. Manufacturers may twist trade terms to their own satisfaction for branding purposes, yet may not be able to obtain a monopoly on this brand by its acceptance by officials at Washington as a trade-mark. Common property rights must not be violated.

As the process of producing rubber articles from a rubber solution deposited on wood, metal or porcelain forms developed, it was found a practical and economical method for the production of surgeons' gloves and many other articles which required thin flexible rubber. It eliminated in large measure the results of slight imperfections in handmade seams which were almost unavoidable even with the most skilled workers. This process, now largely used, came to be called the "dipped" method for reasons which will be obvious from an explanation of the work.

Manufacturers of dipped goods employ variations in details of processes which in a general way conform to certain principles. The first essential is to secure a solution of rubber by means of some solvent, such as one of the forms of naphtha. To this solution pigments may be added according to the various requirements.

Working the Rubber

The finest selected crude rubber is used in making the solution. The rubber is worked out on mills consisting of two heated rollers revolving in opposite directions and usually at different speeds to obtain a grinding effect. This rubber having softened by this process is transferred to tanks containing the solvent. These tanks are supplied with paddles which revolve and churn the contents until the rubber is dissolved and the solution is of proper consistency. From the churn the solution, or cement as it is commonly called, is placed in metal tanks which form part of the dipping apparatus.

The greatest care must be exercised to prevent fire from ignition of the fumes caused by the evaporation of the naphtha. All parts of machines are grounded to prevent sparks of static electricity from causing the gasses to ignite. The fumes are carried away by elaborate ventilating systems.

The dipping equipment consists of tanks of suitable size for holding the cement. The tanks are covered when not in use to prevent evaporation. Above these tanks are the frames for holding the forms on which the rubber is deposited. The forms are arranged to attach to these frames and the frames are lowered slowly by means of cog wheels so that the forms are immersed in the cement to the proper depth and then slowly raised. The forms, with a very thin coating of cement, are held by the frame slightly above the level of the contents of the tank to allow the excess to drip back and leave an even coat of rubber in solution on the form. After a certain time, the frame is raised higher and turned upside down in order to allow the gummy coating to settle back and not leave uneven places where the tendency of the fresh coating is to seek the lowest part of the forms. After a time, the volatile solvent evaporates to a degree sufficient to allow the process of dipping to be repeated. This operation is repeated until a sufficient deposit remains on the form to make the required thickness of the fineshed article.

The forms used for dipping gloves are usually made of fine glazed porcelain and are of standard shape and size.

Atmospheric Conditions Important

The number of dippings required to procure the desired thickness of the rubber deposit depends upon the consistency of the cement and the condition of the atmosphere. Atmospheric conditions are regulated very carefully in the dipping room. Humidity is a factor which effects the work and can now be fairly well controlled. A system of ventilation is essential to remove the vapors or gases caused by the evaporation of the solvent both from the tanks and the deposits on the forms.

The deposits on the forms are allowed to dry sufficiently to allow such work as rolling the open ends of cots and nipples and the gauntlets of the surgeons' gloves while still on the forms. After such work is completed and the sizes stamped, the forms, with the gloves in their uncured or raw state, are ready for the curing process which gives them the qualities essential to service. This process compares with what is generally termed "vulcanizing" when the ordinary articles made of rubber are referred to, but to distinguish we call the process "curing." The forms are put on convenient racks which are placed in an air tight box called the curing box. Here they are exposed to a vapor generated by a heated solution containing the curing ingredient, practically speaking, some form of sulphur. The gloves are exposed for approximately 30 minutes to this vapor and are subject to a chemical change.

After the curing process, the gloves are stripped from the forms and the inside surface is exposed to a curing acid or vapor so that all tackiness is obviated. Lastly, the goods are inspected and sorted and either dusted with tale or packed with the glossy finish according to the requirements or custom of the different manufactures.

These gloves, the thickness of which is only about ten one-thousands of an inch, made in one piece without seams, are an essential of the surgeons' equipment. In use, the surgeon has freedom in the movement of the hands and is able to retain a fine sense of touch made possible by the extreme thinness of the rubber.

To give the service and the protection required of them, the most minute and careful inspection is necessary. The smallest hole, the size of a pin point, must not be overlooked—they must be perfect. In spite of the fact that the rubber is very thin and subject to injury in the handling of instruments and dressings, gloves properly made and carefully cared for and handled, frequently give remarkable service. The life of the gloves depends largely upon these things and the method and care in the sterilizations to which they must be subjected.

The surgeons' glove is used by many women in house work and in the handling of dyes and for other general uses where a light weight glove is required. New uses are constantly being found for them outside the surgical profession.

There is perhaps no one article made of rubber more necessary to the surgeon than his gloves. The best skill of the manufacturer is employed in order to produce a superior article. Minute care is exercised in the regulation and control of each process from the selection of the rubber to the final inspection of the finished product.

Chlorinated Rubber

Chlorinated rubber is adapted for various uses. Upon being properly mixed with a suitable solid solvent, such as napthalene, it can be molded into articles of various forms under heat and pressure and is also capable of being rolled into sheets. The material that is produced in this manner is especially adapted for uses as a veneer or outer receiving layer for disc phonograph records, and also in cylindrical form, for cylindrical records. The characteristics of chlorinated rubber—hardness, toughness, flexibility and color may be varied greatly by regulating the amount of chlorine that is combined with the rubber, and also by adding to the chlorinated rubber various fillers, such as wood flour, chalk, bentonite and the like.

A new process has been patented by Thomas A. Edison in U. S. Patent No. 1,495,580, in which the rubber is subjected to the action of dry chlorine gas in the presence of aqueous carbon tetrachloride. The rubber is first cut into the form of thin sheets or strips, pale crepe being employed, and placed in an air-tight chamber of glass or eathenware. Under the action of the gaseous solvent the rubber swells and the chlorine reacts with it to form a highly chlorinated rubber. The carbon tetrachloride vapors are passed continuously through the chamber in which the rubber is being treated. After the vapors leave the chamber, they are condensed and freed from any chlorine, hydrochloric acid and water which may be present. The solvent is then used over again.

The chemical action that takes place is that the chlorine replaces some of the hydrogen in the rubber and this hydrogen combines with the chlorine to form hydrochloric acid. After the rubber has been completely chlorinated, it is in the form of a soft, syrupy mass, containing some hydrochloric acid. This mass is removed from the chamber and the chlorinated rubber is precipitated in water.

The temperature maintained during the chlorination process is never allowed to exceed 212 degrees F. When this is done there is no danger of the chlorinated product being injured by the heat. One of the main advantages of the process lies in the fact that it eliminates the necessity of using a large amount of solvent.

VULCANIZATION & ACCELERATORS

By Andre Dubosc

PART 1 (*CONTINUED*)

Theory of Vulcanization

Proof that Van Rossem Theory is Fallacious—Views of Van Iterson Confirmed by Ostromylinsky who Says Vulcanization is a Two-phase Process—No Chemical Combination of Sulphur and Rubber, Says Harries

DURING the progress of the vulcanizing process the rubber can be subjected to great mechanical stress which has not the effect of changing the duration of the vulcanization to any appreciable degree. For example when a mixture, containing 92.5 parts of rubber and 7.5 parts of sulphur, is experimented with and subjected to different degrees of mixing and mastication, the combination of the sulphur molecule with the rubber molecule takes place always at the same rate of speed, although the viscosities of the solutions that are made with the vulcanized rubber products in benzene solvent vary from 177 to 63. Hence, in accordance to the conclusion derived from these experiments by Van Rossem, there is no relationship between the percentages of nitrogen in the rubber and the rapidity of the vulcanization. This is an absolutely erroneous conclusion, as may be seen from a study of the effects of nitrogenous accelerators on the rapidity of vulcanization.

The Effect of Nitrogen

Crude rubber, which is heated for a number of hours in the medium of an inert gas, and then is mixed with sulphur, is found to vulcanize at a much greater speed than a mixture of rubber and sulphur which has not been treated in this manner. The preliminary heating of the rubber mass evidently brings about a depolymerization of the rubber molecule, the net result of which is the facilitation and increase in the rapidity of vulcanization.

It was also determined that the result is not the same when the heating of the rubber mass is carried out in air. This is easily enough explained by the fact that such heating tends to cause partial oxidation of the rubber and its transformation into Spiller's resin.

Rubbers which possess low viscosity in benzene solution, etc. can be converted by a prolonged vulcanization into products which are resistant to mechanical wear and possessed of a considerable degree of hardness. This can be done without any danger of over-vulcanization. The solid, inert fillers that are added to the rubber mixture do not have any effect on the speed of the vulcanizing process. Their only influence is on the mechanical properties of the vulcanized products, as for example, their resistance to breaking, the stretch, and the like.

On the other hand the addition of soft materials, such as paraffine, has a certain action on the vulcanization, which is of favorable character.

Effect of Heating on Viscosity

During the heating of a mixture of rubber and sulphur to a temperature of 145 degrees C, for the first few moments, the product remains soluble in the ordinary solvents, but on the other hand the viscosity of the solutions obtained from the partially vulcanized mass increases. A similar effect is obtained when mixtures of rubber and sulphur are stored in a storehouse over a period of several months. The rubber mixture is not vulcanized but is maintained at the atmospheric temperature. What takes place in this case is evidently a polymerization of the rubber molecule of a similar nature as had already been observed by the scientist Lothar Weber.

If the vulcanization of the rubber sulphur mixture is continued in the first case, the rubber becomes insoluble in the ordinary solvents. The stretch and the resistance to breaking of the vulcanized rubber product attains a maximum for a coefficient of vulcanization in the neighborhood of 2.

A vulcanized rubber which possesses a lower coefficient of vulcanization is often found to be porous. On the other hand rubber which has a higher coefficient of vulcanization is found to break easily when stretched. In practical rubber vulcanization the coefficient of vulcanization should vary between 2 and 4, but the breaking load in this case does not attain its maximum possible value. When a vulcanized rubber sample is stored for a certain length of time at the ordinary atmospheric temperature, its mechanical properties are subjected to considerable change without there being any appreciable increase in the coefficient of vulcanization.

The Van Iterson Theory

In accordance with the views which are held by this scientist and also by a number of chemists who form the organization of the Delft Institute of which Van Iterson is a member, sulphur combines very definitely with rubber during the course of the vulcanization, but the limit of the combining capacity of rubber and sulphur is not defined by the figure 32.68, a value which corresponds to the formula of vulcanized rubber: $C_{32}H_{50}S_2$.

The character of the curve which depicts the variation in the speed of vulcanization, as the quantity of sulphur that enters into the mixture is varied, depends to a large degree on this latter quantity. When ten per cent sulphur is admixed with the rubber mass, then the curve takes on the form practically of a straight line, while when the percentages of sulphur above this value are employed, the curve assumes the form of the letter S, which is characteristic of auto-catalytic processes.

In cases where the maximum degree of vulcanization is attained, as when ebonite rubber is manufactured, the phenomenon of auto-catalysis plays a part in the process. In the initial phases of the vulcanization of rubber mixtures, which contain high percentages of sulphur, the rapidity of the fixation of this metalloid still depends on the limited solubility of the same in the rubber.

The degree with which rubber vulcanizes is directly dependent on the degree with which the sulphide of polyprene is formed. The solvent power of the rubber gum with respect to sulphur undergoes a gradual increase. Hence it cooperates with the auto-catalytic effect to yield of progressive formation of vulcanized rubber according to the vulcanization curve.

At the outset the combination that takes place between rubber and sulphur is not proportional to the concentration of the metalloid in the rubber mixtures. This is particularly

the case when sulphur is present in the mixture below a proportion of ten per cent. The continuity of the changes that take place during the process of vulcanization, which are due either to the action of sulphur in vulcanization at elevated temperatures, or to the action of chloride of sulphur in vulcanization at low temperature, and the very considerable effect which is brought about by very small quantities of the latter substance give rise to the idea that a colloidal phenomenon of considerable importance takes place during the vulcanizing process. It leads to the conclusion that this colloidal phenomenon may play an important part in the vulcanization of rubber.

Such a conclusion has been corroborated by Ostromylinsky. It is probable that the combination between the sulphur and the rubber gum to form a sort of sulphide of polyprene takes place in the nature of a colloidal-chemical reaction. No matter what the quantity of this compound that is formed, it combines in a colloidal-chemical manner with virgin rubber and yielding an insoluble complex which does not dissolve in the ordinary rubber solvents.

Vulcanization a Two Stage Process

The vulcanization process may therefore be considered as taking place in two phases:

1. A chemical phase in which a definite chemical compound is formed, the formation of sulphide of polyprene, $C_{80}H_{64}S_2$, which is formed in a very small quantity in all likelihood. This sulphide is an excellent solvent of sulphur.

2. A physico-chemical phase in which the sulphide of polyprene is adsorbed by the virgin rubber which is soluble in the usual solvents that dissolve rubber, and the rubber is transformed into a complex molecule which is insoluble in the same solvents. This adsorption of the sulphide of polyprene is accompanied by the stabilization of the rubber and its attainment of the characteristic properrties of the vulcanized gum.

It is likewise possible that from the standpoint of the chemical and physoco-chemical reactions that take place between the rubber molecule and the sulphur molecule, different allotropic modifications of the metalloid are formed at the same time. It is particularly in this latter order of modifications that can take place in the vulcanization reactions that the action of accelerators is manifested, for it has been shown in modern times that every substance, which possesses the property of accelerating the vulcanization of rubber, is likewise an effective catalyst in the internal transformation of lambda sulphur into mu sulphur. It is almost certain, as the author himself has felt for a long time, that the accelerators of vulcanization exert their action on the sulphur that is contained in the rubber mixture and in this manner effect a marked increase in the rapidity of the vulcanizing process.

Due to the change that takes place in the sulphur, which is most probably a change in the valence of the sulphur atom, the sulphur molecule is able to combine with a considerably greater amount of rubber to form a much larger mass of sulphide of isoprene. It is then this substance which is adsorbed as soon as it is formed that brings about the rapid vulcanization of the rubber molecule. It is altogether probable that in this explanation is to be found the solution of the problem of the acceleration of vulcanization.

The Harries and Fontrobert Theory

A mixture, which contains para rubber and ten per cent of sulphur, is vulcanized for a period of thirty minutes at a temperature of 145 degrees C. It is then extracted for a period of sixty days with acetone. The proportion of sulphur that is contained in the vulcanized rubber mass decreases gradually until it finally falls to as low as 0.29 per cent. In accordance with the views held by Harries on this matter, this small percentage of residual sulphur must be considered as negligible.

From these observations the experimenters have concluded that vulcanization of rubber is a process in which there is no chemical combination between the rubber and the sulphur molecules. It therefore appears to be a purely physical phenomenon. Nevertheless these investigators do not consider the vulcanization process as a pure and simple adsorption phenomenon, as does Ostwald. They say that although the action of sulphur on rubber does not produce chemical reaction nevertheless it does bring about a change in state.

If the hydrochloride derivative of the pure rubber gum is formed, it will be found that this substance is soluble in chloroform. If, then, the hyrochloride derivative of the vulcanized rubber is formed, it will be found to be completely insoluble in chloroform.

In accordance with the theory that has been developed by Harries, the virgin rubber is in the state which may be termed meta-stable, while the vulcanized rubber is in the stable condition.

Meta-stable substances refer to conditions of matter which are in the state of unstable equilibrium. These unstable systems change gradually, or under different forms of energy, tend to change into systems of stable equilibrium and form what are known as stable bodies.

Hence in accordance with Harries' theory the vulcanization of rubber is nothing more than a change in state of the rubber system, which change is brought about by the combined action of sulphur and of heat. The German scientist has established a difference between this first class of vulcanization, which is of a purely physical character, and the after-vulcanization in which the sulphur tends to combine chemically with the rubber in the proportion of from two to four per cent.

Criticism of the Theory

Such an explanation of the vulcanization of rubber appears to be scarcely in agreement with the experiments that were made by Spence and Devries. For these chemists have shown that the after-vulcanization of rubber, which takes place below a temperature of 80 degrees C, implies a considerable change in the physical properties of the gum. Now, Harries considers that the insolubility of the vulcanized product in the ordinary solvents which possess a solvent action on the unvulcanized rubber, and furthermore the resistance of the vulcanized product to ozonization are sufficient phenomenon by which the vulcanization process may be characterized. He does not appear to attach any importance to the variation in the physical constants.

Nevertheless stable rubber exhibits certain characteristics which differentiate it very precisely from meta-stable rubber or virgin rubber. Its chlorhydrate is harder and remains insoluble in the solvents that dissolve the hydrochloride of polyprene. The hydrochloric acid contained in the hydrochloride is liberated at a temperature of 150 degrees C, or ten degrees higher than that temperature at which hydrochloric acid is set free from the hydrochloride of the meta-stable gum.

If the hydrochloric acid that is set free is neutralized by means of pyridene, the reworked rubber that is obtained in this manner differs markedly from the virgin rubber. Finally when its ozonide is subjected to hydrolytic action, it is found that levulinic aldehyde is not obtained, as from the ozonide of the ordinary rubber. The product that is obtained is diacetylpropione which indicates a change in the position of the double bonds in dimethyl cyclo octadiene.

Vulcanization of rubber is accordingly accompanied by a change in the internal structure of the rubber molecule.

In an early publication, Erdman said that at a temperature of 160 degrees C, to which the vulcanization of the rubber is limited, sulphur contains appreciable quantities of the substance known as thiozonide, S_3. This thiozonide acts on the rubber in such a fashion that ozone, in accordance with the process that was studied by Harries, yields a thiozonide of polyprene. On the other hand Ostromylenski has shown that catalytic substances facilitate the formation of thiozonides.

When these points are all taken into consideration, it appears to be probable according to Erdman that the vulcanization of rubber is a process that possesses three different stages:

1. The accelerator in the presence of sulphur effects the formation of a thiozonide, and has been stated by the chemists of the Goodyear company the combination must take place between the nitrogen of the accelerator and the sulphur.

2. The thiozonide then combined with the rubber molecule.

3. The accelerator is set free, leaving the S_3 united with the rubber molecule.

In the next issue M. Dubosc will discuss the equilibrium that exists between sulphur and rubber, as determined by Stern.—THE EDITOR

REVIEW DESK

WHAT'S THE MATTER WITH RUBBER. By Rudolph A. Clemen. 6¾″ x 9¾″. 15 pp. Published by the Illinois Merchants Trust Co., Chicago, Ill.

The booklet constitutes a well-presented study of present conditions in American rubber manufacture, the export rubber trade and our crude rubber supply. Although it is palpably written for the perusal of the average business man outside the rubber industry, it should also prove interesting to those in the trade.

It is the opinion of the author that low prices of crude rubber threaten the entire rubber industry. But one has to read the entire pamphlet before he finds the reasons for this belief. It is his contention that the British plantation industry will become disorganized unless profitable prices are maintained. He points out that there is nothing to worry about at the present time but intimates that there may be when the consumption curve crosses the production curve. Experts expect this to happen in a few years.

In the section devoted to the American manufacturing industry he names the three chief centers: Ohio, New Jersey and Massachusetts. Each is a leader in a specialty for Ohio produces 57% of the tires, computed on value; Massachusetts 39% of rubber clothing and footwear; and New Jersey 49.2% of the value of hose and belting factories.

The tables showing the world's production and shipments of crude rubber from 1836 to 1922 and the growth of the American industry from 1849 to 1921 are very interesting.

Writing of the possibilities of the balloon tire Mr. Clemen says, "In the opinion of one manufacturer it will be two years before the tire industry will benefit greatly by the introduction of the new tire..... Twenty-two standard sizes and types of the modified balloon tires are being offered today."

Because the domestic market has absorbed 96% of production, American manufacturers have been slow to enter the export market. But exports of rubber products other than tires are growing in importance. The United States has won supremacy in the production of rubber household and bathing goods and druggists' sundries.

The third section of the booklet is devoted to the supply of crude rubber. The plantation system is summarized in a few paragraphs but much space is occupied by a discussion of British restriction. Writes Mr. Clemen, "Aggressive export taxes, however plausible their justification may be, arouse suspicion in the nation upon which the burden falls and may result in steps to break the monoply or in retaliation. When the sliding scale tax was proposed to be levied on rubber, the British India Rubber Manufacturers' Association in Great Britain protested..... The British plan is partly the result of a mistaken assumption by the growers that the American consumption of rubber would have been doubled in the last three years with the doubling of the number of automobiles in use in America. They planted trees accordingly. But they had not foreseen that improvements in tire fabrics would triple the life of the tire, or that American manufacturers would carry smaller stocks."

After a discussion of Secretary Hoover's proposal to extend the Webb Pomerene Act to enable American buyers to combine in the purchase of raw rubber, he summarizes the existing rubber supply situation. Between the United States and Great Britain matters stand as follows: (1) Ordinarily there have been good relations and good profits. (2) Overproduction in 1920 and the ensuing business slump have temporarily disturbed the situation. (3) Restrictive measures put into effect by Great Britain have not been altogether successful. Therefore a low price is continuing to threaten future plantings and production. (4) A feeling has arisen in Great Britain that this country is endeavoring to keep prices

(Continued on Page 434)

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MARKETS

Cottons and Fabrics

NEW YORK, Sept. 2, 1924

The weather has played a large part in the cotton market and prices continue to fluctuate from day to day with the net change to date over the past two weeks comparatively small. On the 20th with a large covering movement going on in the trade, together with a lesser degree of liquidation, prices showed an advance of from 40 to 56 points. But on the following day after a net advance of one cent had featured the morning's trading, the market under a steady pressure of contracts reversed its position and declined from 60 to 70 points, showing a net loss for the day of from 36 to 41 points. Liverpool, due to reselling of cotton bought during the past few days, likewise suffered a decline all along the line.

The crop condition and production for the date of Aug. 16, as issued by the Department of Agriculture on the 23rd of last month was 64.9 per cent of normal and a probable production of 12,956,000 bales. This shows an improvement over Aug. 1 of 605,000 bales and the condition as compared with private reports issued during the week shows a difference of 0.9. The average crop conditions of these same private authorities were 12,973,000 bales in comparison with the governments indicated crop figure above.

NEW COTTON EXCHANGE RULES APPROVED

Rules and regulations governing the new Chicago Cotton Exchange have been found to meet with all requirements as put forth in the Cotton Futures Act.

These rules and regulations are almost identical with those governing the New York and New Orleans exchanges in order to meet all legal requirements. All papers in connection with the new exchange have been approved by officials of the Department of Agriculture.

Although the new exchange had been expected to open directly after Labor Day, it is now probable that it will be late September before actual trading takes place.

Although the cotton crop this year has met with various unfavorable conditions among which have been the Boll Weevil and adverse weather experienced in nearly all sections of the belt, it is generally felt throughout the trade that the crop is in an infinitely better condition than it was last year at this same period. It has also been pointed out by the board of the Department of Agriculture that with August a critical month for the cotton crop the fact that the first half of the month was successful is considered a good sign for the remainder of the year.

According to foreign reports recently received foreign cotton areas for the year show a considerable increase over last year. Cotton acreage in Egypt for this year's crop is 12.5 per cent larger than for last year with the increase in area reported to have gone into the upper varieties. For over 50 per cent of the total acreage of India a recent report issued during the latter part of July, shows a 3 per cent increase. Increases in acreage in both Argentina and Peru

(Continued on next page)

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Cotton Markets

(Continued from Page 429)

are also estimated by the agricultural commissioner.

The local market, following the indicated crop figures of the government broke one cent on the 25th due to heavy selling operations and liquidations going on throughout the trade. Prices at the close showed a loss of over 100 points from the previous day's quotations, with the October position quoted at 24.42, January at 24.02 and March at 24.36.

The Department of Commerce in a recent statement relative to raw cotton stocks showed that during the first ten months of the present cotton season imports at Havre amounted to 758,832 bales, an increase of 100,542 bales as compared with the same period in 1923, and that 75 per cent of this increase was in American cotton imports.

New York Cotton Prices

	Open	High	Low	Sept. 2 Closed	Aug. 15 Closed
October	24.61	24.67	24.43	24.47	26.83
December	24.33	24.33	24.02	24.12	26.20
January	24.26	24.29	24.00	24.08	26.10
March	24.45	24.54	24.27	24.33	26.42
May	24.62	24.68	24.45	24.50	26.60

TIRE FABRICS

The situation in the tire fabric industry has shown little change during the past ten days. The large factors in the trade continue to report a favorable amount of business done for the account of tire manufacturers on contract running well up into next year. On the other hand there are many mills which are forced to be satisfied with spot orders where the quantity involved is of no great size.

Recent advices from the Akron district state that tire production in that center is fast nearing the peak with a daily production of tires at the present time amounting to 85,000. In view of this fact together with recent reports from the rubber trade that tire factories are continuing to place orders in a large quantity way for crude rubber in order to meet the increase in production it would seem that the fabrics market should come in for its share of buying. However, it is estimated at the present time that more than 25 per cent of the tire makers are covered on tire fabrics up until May and June of next year; that at least 50 per cent are covered up until March, next, and the remaining 25 per cent, whose requirements do not make it necessary for them to purchase on long contracts, continue to buy on the hand-to-mouth basis as they have been doing for a number of years in the past.

The general opinion expressed is that the peak of the buying for this year has been reached and unless raw cotton declines to a point resulting in a lowering of fabric prices to a level at which manufacturers would find it of benefit to buy, there will be no great additional buying for some time. This is seen in the fact that during the past week or so trading in this market has been considerably held up by the uncertainty of the cotton market, and although inquiries amounting to 600,000 pounds were abroad, only a few orders were reported booked.

Prices for the most part have remained unchanged from previous quotations. During the past week Carded Peeler Cord is reported to have come in for the greater amount of business, with this grade sold in a fair quantity way at 53c and at 54c. Carded Egyptian Cord also came in for some interest at 63c with the range quoted to-day on this grade at from 62c to 67c, depending on quality and delivery. Combed Egyptian is obtainable in most directions at 72c with a few sellers asking as high as 75c. Square Woven fabric continues to be quoted at a 2c parity with Cord. In most quarters sellers are asking from 52-54c for spot builder while with a bid in hand 50-52c can possibly be done on contract business.

CORD FABRICS			
Combed Sakellarides		Nominal	
Combed Peeler	lb.	Nominal	
Carded Peeler	lb.	.53 @	.57
Combed Egyptian uppers	lb.	.72 @	.75
Carded Egyptian uppers	lb.	.62 @	.67
SQUARE WOVEN			
17¼-ounce Egyptian uppers, combed	lb.	Nominal	
17¼-ounce Egyptian uppers, carded	lb.	.60 @	.65
17¼-ounce Sakellarides, combed	lb.	Nominal	
17¼-ounce Peeler, carded	lb.	.52 @	.54

Ducks—The market in general for ducks has been a quiet and dull affair for some time with little business of startling nature put through for the account of manufacturers.

Many houses report the volume of sales as encouraging but the quantities involved have been small and have had no effect on the market insofar as prices are concerned. The tone of the market on the surface would seem to be firm but with a bid in hand it is possible to shade prices in most directions. In contrast to the rest of the market sellers of belting and hose duck report large sales of both spot and September delivery at prices ranging from 43c to 45c.

Burlaps—A quiet and steady tone has featured this market for the past week or so. Consumers have placed many inquiries in the market but for the most part have limited their purchases to quantities sufficient only to meet requirements. This constant spot buying on the part of big manufacturers due to their unwillingness to place orders on future contract has been the cause of the steady rise in prices because speculators in the Calcutta market realize the constant need for goods because of this hand-to-mouth buying policy. The trade, however, feels that the next few weeks will see a decline in prices due both to a lessening in demand and the unwillingness of the manufacturers to pay the present high prices now asked by foreign sellers. This attitude would seem to be substantiated by the lack of interest displayed by buyers in the market during the past week and a slight easing off in both local and foreign prices.

Private reports that between 1,600 and 1,900 bales of burlap were damaged by fire on the steamship Chalister due to arrive here at the end of this week have not as yet been confirmed but it is expected that the market will reflect in price the final outcome.

SHEETINGS			
40-inch 2.50-yard	yd.	.16¾ @	—
40-inch 2.85-yard	yd.	.14¾ @	—
40-inch 3.15-yard	yd.	.14¾ @	—
40-inch 3.60-yard	yd.	.12 @	—
40-inch 3.75-yard	yd.	.11 @	—
40-inch 4.25-yard	yd.	.10 @	—
DUCKS			
Belting	lb.	.43 @	.45
Hose	lb.	.43 @	.45
Enameling	lb.	.47 @	.52
Shoe Ducks	lb.	.50 @	.52
Single filling		.20½ @	.22½
Double filling	lb.	.23 @	.24
BURLAPS (Carload Lots)			
7½-ounce 40-inch		7.10 @	—
8 -ounce 40-inch		7.15 @	—
10 -ounce 40-inch		9.70 @	—
10½-ounce 40-inch		10.10 @	—
DRILLS			
37-inch 2.75-yard	yd.	.15 @	—
37-inch 3.00-yard	yd.	.14 @	—
37-inch 3.25-yard	yd.	.13 @	—
37-inch 3.50-yard	yd.	.12 @	—
37-inch 3.95-yard	yd.	.10¾ @	—
OSNABURGS			
30-inch 7-ounce		.14½ @	.15
40-inch 7-ounce		.16½ @	—

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WITH A REPUTATION FOR
UNIFORMITY -- RELIABILITY -- CLEANLINESS

Crude Rubber

NEW YORK, Sept. 2, 1924

A general inactivity and a slackening up in demand on the part of manufacturers has featured the crude rubber market during the past ten days. Although present asking prices show an approximate gain of two cents over our last quotations, this advance can be attributed more to local speculative buying and higher London cables than to any real buying interest displayed by tire makers.

Notwithstanding the fact that Akron manufacturers have made few committments in any real quantity way during the past week or so, recent reports from that district state that production in tires continues unabated and it is believed that the peak in the movement will be reached in the near future. Advices received of late show a daily production of 80,000 tires per day as against 60,000 in the early part of the year and 100,000 a day is expected to be the output if present operations continue at the scale at which they are now running. The General Tire & Rubber Co. has just announced that it will add three new wings to its factory thereby increasing its production approximately 50 per cent. This is just an instance of what the larger manufacturers are doing in anticipation of a large demand from automobile manufacturers this Fall.

From statistics compiled by the Department of Commerce automobile production during July amounted to 237,652 cars an increase over the previous month of 19,709 but showing a decline from July, 1923 of 59,761.

The local market on the 16th showed an advance of one cent on nearby and 3/8c for futures due to the fact that London cables were up 5/8d from the previous night's closing. Settlement of reparations and some interest displayed in C. I. F. business were attributed as the main reasons for this advance. On the 18th with manufacturers withholding their bids, the price list moved backward a full half cent with London off 1/8d, but on the following day the spot position recovered 3/8c to 27c done for nearby due largely to the fact that nearby rubber was in strong hands and was difficult to obtain in a large quantity way. This is still true.

During the trading on the 20th and 21st prices again advanced reaching a point 1/4c below the high of the year, with sellers on spot placing business at 27 1/2c, September at 27 1/4 and Oct./Dec. at 27 3/8c. The Para market was also very strongly held with Up-river Fine at the highest level of the year at 30c. During the remainder of the week, with little buying power manifested in the market and sellers inclined to unload their contracts, a setback of one cent took place with the nearby position obtainable in nearly all directions at 26 1/2c.

Rubber stocks in London during the week ended Aug. 23 displayed a loss of 507 tons as compared with the previous week's figures which amounted to 50,335 tons.

During the past week the market has assumed a firmer tone with prices on the upward trend. Although manufacturers continued to hold aloof, the covering of short contracts by local dealers and a large amount of speculation placed the list on a higher basis, with closing quotations of this date showing a net advance of over a half cent.

A slow resumption of activity, which usually takes place after a holiday period, seems to be in effect in the market and little additional business is looked for during the remainder of the week. Prices are well held at levels quoted at the end of the week, with the spot position in exceptionally strong hands where it will in most probability remain until the arrival of four or five steamers.

The British rubber trade has expressed the opinion that the firmer prices of the past few weeks can be attributed largely to an improvement in rubber market sentiment. Many feel that the Stevenson plan, after being nearly a year in operation, is only a partial success.

NEW YORK MARKET

Plantations—			
Ribbed Smoked Sheets.			
Spot	.27	@	—
September	.26 7/8	@	—
Oct.-Dec.	.26 3/4	@	—
Jannary/March	.27 1/4	@	—
First Latex, crepe, spot	.26	@	—
Amber Crepe No. 1, spot	.27	@	—
" " No. 2,	.26 3/4	@	—
" " No. 3,	.26 1/2	@	—
" " No. 4,	.26 1/4	nominal	
Brown Crepe, Rolled	.25 1/2	@	—
" " Clean, thin	.26 1/4	@	—
" " Specky	.25 3/4	@	—
Scrap, Colombo No. 1	.18	@	—
Pontianac—			
Prime Pressed	.14	@	—
Palembang	.08 3/4	@	—
Bangermassin	.08 1/4	@	—
Sarawak	.08	@	—
Paras—			
Up-river Fine	.30	@	—
" Medium	.28	@	—
" Coarse	.17 1/4	@	—
Islands, fine	.26	@	—
" medium	.25 1/2	@	—
" coarse	.18	@	—
Cameta	.19	@	—
Madeira Fine	.30 1/2	@	—
Acre Bolivian, fine	.30	@	—
Cut Beni Bolivian, fine	.30	@	—
Tapajos, fine	.28 3/4	@	—
Xingu Ball	.16	@	—
Caucho Ball—			
Upper, shipment	.19 1/4	@	—
Centrals—			
Central. scrap, prime	.18	@	.18 1/2
Corinto, scrap	.18	@	.18 1/2
Esmeralda, sausage	.18	@	.18 1/2
Guayule, w and d	.26	@	—
Africans—			
Benezuela, No. 1	.14 1/2	@	—
" No. 2	.13 1/2	@	—
Congo, upper, black	.21	@	—
" " red	.20	@	—
Kassai, Prime Red	.20	@	—
Balata—			
Black, Columbia	.52	@	.54
" Cuidad	.63	@	.64
Surinam, sheet	.76	@	.77
Gutta Percha—			
Siak	.18 3/4	@	—
Red Macassar	3.00	@	3.20
Chicle—			
Mexican, Yucatan	.64	@	.65

LONDON MARKET

Standard Ribbed Smoked Sheets—	
Spot	13 3/4 d
September	13 3/4
Oct.-Dec.	14
Jan.-Mar.	14 1/4

SINGAPORE MARKET

Standard Ribbed Smoked Sheets—	
Spot	13 1/4 d
September	13 1/4
Oct.-Dec.	13 1/2
Jan.-Mar.	13 3/4

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Chemicals and Compounding Ingredients

THE INDUSTRIAL CHEMICAL MARKET—NEW YORK, Sept. 10, 1924—Factors in this market report continued improvement over the last week or so with a large volume of orders placed for the account of rubber manufacturers. Many feel that August was the turning point of the year and with a daily improvement noted during that month, September should bring additional business. Up to the present time prices of most items have remained unchanged. Although there has been considerable buying in the market of late, at the time there has not been sufficient to warrant higher prices, but those dealers who have been forced to sell heretofore at prices insufficient to bring a reasonable margin of profit are awaiting the Fall months with the hopes that the steady increase in buying will eventually force prices to a higher level.

ACCELERATORS

Organic

Aldehyde ammonia, crystals	lb.	$ .90	@ .95
Aniline oil, drums	lb.	.17	@ .17½
Diphenylguanidine	lb.	1.10	@ 1.15
Excellerex,	lb.	.35	@ .40
Formaldehyde-Aniline	lb.	.40	@ .42½
Hexamethylene-tetramine	lb.	.82	@ .85
Paraphenylenediamine	lb.	1.40	@ 1.50
Super-Sulphur No. 1	lb.	.50	@ .60
Super-Sulphur No. 2	lb.	.25	@ .35
Tetramethyl— **Thiuramdisulphide**	lb.	6.00	@ —
Thiocarbanilide, kegs	lb.	.26	@ .29
Vulcocene	lb.	.35	@ —

Inorganic

Lead, sublimed blue	lb.	.11	@ —
Lead, white	lb.	.10	@ —
Litharge, domestic	lb.	.10	@ —
Lime, Superfine	lb.	.02	@ .04
Magnesia, calcined, light,	lb.	.15	@ .18
extra light	lb.	.20	@ .24
heavy	lb.	.04	@ .05

COLORS

Blacks

Arrow "Aerfloted"	lb.	.07	@ .10½
Bone Black	lb.	.08	@ .11
Carbon "	lb.	.07	@ .11
Drop "	lb.	.07½	@ .10
Ivory "	lb.	.15	@ .45
Lamp "	lb.	.12	@ .40
Micronex	lb.	.08	@ .12

Blues

Cobalt	lb.	.52	@ .56
Prussian	lb.	.36	@ .39
Ultramarine	lb.	.06	@ .35

Browns

Iron oxide	lb.	.02¼	@ .06¼
Sienna, Italian,	lb.	.04½	@ .14
Umber, Turkey,	lb.	.04	@ .04½
Vandyke, domestic	lb.	.03½	@ .04

Greens

Chrome, light	lb.	.29½	@ .31
medium	lb	.32	@ .35
dark	lb.	.35	@ .38
Commercial	lb.	.10	@ .10½

Reds

Antimony crimson, 15/17 F.S.	lb.	.37	@ .44
sulphur free	lb.	.45	@ .60
golden, 15/17 F.S.	lb.	.20	@ .22
calcium and sulphur free	lb.	.40	@ —
red sulph.15-17 F.S.	lb.	.16	@ .20
Indian, English	lb.	.11	@ .12
Para toner	lb.	.95	@ 1.00
commercial	lb.	.15	@ .18
Red Oxide, reduced	lb.	.08	@ .12
pure	lb.	.12	@ .14
Toluidine toner	lb.	1.85	@ 2.10
Venetian red	lb.	.02	@ .05½
Vermillion, quicksilver, English	lb.	1.25	@ 1.35
domestic	lb.	.15	@ .25

Whites

Albalith	lb.	.07	@ .07¼
Aluminum bronze		.55	@ 1.25
Lithopone Azolith	lb.	.06¼	@ —
Zinc Oxide—American Process XX red	lb.	.07¾	@ .08¼
Kadox, black label, bags, cars		.11⅝	@ .11⅞
blue " " "		.10⅝	@ .10⅞
red " " "		.09⅝	@ .09⅞
American Azo: ZZZ (lead free)	lb.	.07¾	@ .08¼
ZZ (under 5 per cent leaded)	lb.	.07	@ .07½
Z (8-10 per cent leaded)	lb.	.06¾	@ .07¼
Zinc Oxide—French Process White seal	lb.	.12	@ —
Green seal	lb.	.10¾	@ —
Red seal	lb.	.09¾	@ —

Yellows

Chrome, light		.17	@ .18
dark and medium	lb.	.17	@ .18
Cadmium Sulphide	lb.	1.75	@ 2.50
Ocher, French medium	lb.	.02¼	@ —
domestic	lb.	.01½	@ .02½

COMPOUNDING INGREDIENTS

Aluminum Flake	ton	25.00	@ 40.00
hydrate light	lb.	.17	@ .18
Ammonia carbonate,	lb.	.13½	@ .14
Asbestine	ton	13.00	@ 15.00
Barium carbonate	ton	65.00	@ 68.00
Barium Dust	lb.	.05	@ .06
Barytes southern off-color,	ton	15.00	@ 18.00
Western prime white	ton	22.00	@ 23.00
Imported	ton	28.00	@ 33.00
Basofor	lb.	.04¼	@ —
Blanc fixe, dry f.o.b. works	lb.	.03⅜	@ —
Carrara filler	lb.	.01½	@ .02
Chalk, precipitated, extra light	lb.	.04¼	@ .05
heavy	lb.	.03¼	@ .04
Clay, China, domestic,	ton	12.00	@ 15.00
Dixie	ton	22.00	@ 32.00
Blue Ridge	ton	12.00	@ 25.00
Fossil flour	lb.	.03	@ .05
Glues, extra white	lb.	.22	@ .30
medium white	lb.	.20	@ .26
cabinet	lb.	.18	@ .28
cabinet low grade	lb.	.15	@ .18
common bone	lb.	.10½	@ .13
Graphite flake, bbls.	lb.	.06½	@ .12
Lump	lb.	.04	@ .10
Infusorial earth, powdered	ton	60.00	@ —
bolted	ton	65.00	@ —
Liquid latex	gal.	1.25	@ 1.35
Magnesia, carbonate	lb.	.08¼	@ .08¾
Mica, powdered	lb.	.07	@ .15
Rotten Stone (powdered)	lb.	.02½	@ .04½
Soapstone, powdered	ton	15.00	@ 22.00
Starch, powdered	cwt.	3.17	@ 3.27
Talc, domestic	ton	15.00	@ 22.00
French	ton	18.00	@ 22.00
French, high grade	ton	38.00	@ 45.00
Italian	ton	45.00	@ 55.00
Terra Alba	cwt.	1.25	@ 2.00
Tripoli, white	lb.	.02	@ .02¼
Whiting, commercial	cwt.	.85	@ 1.15
gilder's bolted	cwt.	1.10	@ 1.20
English cliffstone	cwt.	1.50	@ —
Paris whiteAmerican	cwt.	1.25	@ 1.50
Quaker	ton	13.00	@ 15.00
Sussex	ton	8.00	@ 16.00
Wood pulp XXX	ton	35.00	@ —
" " X	ton	25.00	@ —

MINERAL RUBBER

Genasco (factory)	ton	50.00	@ 52.00
Granulated M.R.	ton	50.00	@ 54.00
Hard hydrocarbon	ton	30.00	@ 40.00
Soft hydrocarbon	ton	30.00	@ 40.00
320/340 M. P. hydrocarbon (c. l. factory)	ton	45.00	@ 50.00
300/310 M. P. hydrocarbon (c.l. factory)	ton	40.00	@ 45.00
Synpro, granulated, M. R. (factory)	ton	55.00	@ 70.00

SOFTENERS

Acids

Acetic, 28%	cwt.	3.12	@ 3.37
Cresylic, 97%	gal.	.63	@ .68
95%		.61	@ .66
Muriatic, 20%	cwt.	.90	@ 1.00
Nitric, 36 degrees	cwt.	4.25	@ 4.50
Sulphuric, 60 degrees	ton	9.00	@ 10.00
66 degrees	ton	14.00	@ 15.00
Tartaric, crystals	lb.	.29	@ —

Alkalies

Caustic soda, 76%	cwt.	3.76	@ 3.91
Soda ash, 58% C.L.	cwt.	1.43	@ 1.45½

Oils

Castor, No. 3, bbls.	lb.	.16¼	@ —
Chinawood, bbls.	lb.	.14½	@ —
Corn, crude, bbls.	lb.	.14¼	@ —
refined	lb.	.15¼	@ —
Cottonseed, crude		.11½	@ —
Glycerine C.P. Drums	lb.	.19	@ .19½
Linseed, Raw C.L.	gal.	1.04	@ —
Palm, Niger	lb.	.08⅜	@ —
Lagos	lb.	.08½	@ .08⅝
Peanut,domestic,crude	lb.	.13½	@ —
Petrolatum, white		.12	@ —
amber		.05½	@ .06
dark amber		.05	@ .05½
Pine, steam distilled	lb.	.65	@ —
Rapeseed, refined	gal.	.87	@ .88
blown	gal.	1.00	@ —
Rosin, first rectified	gal.	.40	@ .42
second rectified	gal.	.45	@ .47
Soya Bean, crude		.12¾	@ —
Tar, commercial	gal.	.30	@ .32

Resins and Pitches

Cumar resin, hard	lb.	.09	@ .10
soft	lb.	.09	@ .10
Parra M.R.	lb.	.06	@ .07
Tar Retort	bbl.	11.00	@ —
kiln burned	bbl.	11.00	@ —
Pitch, Burgundy	lb.	.65	@ .66
coal tar	gal.	.06	@ .08
pine	bbl.	5.75	@ 6.00
Rosin, grade K	bbl.	6.15	@ —
Shellac, Superfine orange	lb.	.65	@ .66

Solvents

Acetone, drums C.L.	lb.	.17	@ —
Alcohol, denatured, No. 1 bbls.	gal.	.52	@ .56
Benzol, 90%	gal.	.23	@ —
pure		.25	@ —
Carbon bisulphide	lb.	.06	@ .07
tetrachloride	lb.	.06½	@ .07
Dimethylaniline	lb.	.36	@ .37
Motor gasoline, steel bbls.	gal.	.19	@ —
Naptha, V. M. & P.	gal.	.17½	@ .18
Toluene	gal.	.31	@ —
Turpentine, spirits	gal.	.90	@ .91
wood	gal.	.80	@ .82

Waxes

Bayberry	lb.	.21	@ .22
Beeswax	lb.	.43	@ .45
Carnauba, No. 1	lb.	.33	@ .37
Ceresin, white	lb.	.10	@ .11
Montan, crude	lb	.06	@ .06½
Ozokerite, black	lb.	.26	@ .27
green	lb.	.28	@ .29
Paraffine WhiteA.M.P.	lb.	.05⅝	@ .05¾
Yellow A.M.P.	lb.	.05	@ .05¼
Sweet wax	lb.	.12	@ —

SUBSTITUTES

Black	lb.	.08	@ .14
White	lb.	.09	@ .15
Brown	lb.	.10	@ .15
Brown factice	lb.	.10	@ .15
White factice	lb.	.09½	@ .16

VULCANIZING INGREDIENTS

Black hyposulphite	lb.	.25	@ .26
Sulphur Chloride (drums)	lb.	.06	@ .07
Sulphur flour Commercial bags,	cwt.	1.35	@ 1.70
" bbls.	cwt.	1.70	@ —
Superfine, bags,	cwt.	2.00	@ 2.40
" bbls.	cwt.	2.30	@ 2.75
100% pure, refined, bags	cwt.	2.35	@ 2.65
bbls.	cwt.	2.60	@ 2.90

Chemicals

China Wood Oil—Prices in this market remain nominally unchanged from last quotations. Although consumers have been inclined to make few commitments feeling that prices would show a falling off, the tone of the market has retained its steadiness and sellers in most instances have refrained from placing offerings in the market. For spot in barrels 14½c is asked in most directions with Sept./Nov. arrival quotations at the same figure.

Rapeseed Oil—A sizeable demand on the part of consumers has featured this market during the past ten days with prices showing an advance. Present quotations are from 87c to 88c per gallon in barrels. India exported to the United Kingdom and the Continent during the period from Jan. 1, to July 30, 6,450 tons more than during the same period last year.

Antimony Sulphuret—Dealers in this grade report little business placed during the past two weeks. Rubber manufacturers have placed small orders from time to time to meet requirements but the total volume done is negligible. Sellers to-day are quoting 15c to 16c per pound on the red, 20c on the golden and 40c to 41c for the crimson.

Barium Products—With little buying interest manifesting itself in the market, many sellers have been forced to shade prices. Both the carbonate and the chloride show a decline with the former quoted at $60. to $61. per ton and the latter obtainable in most quarters at $76. to $78. per ton.

Acetic Acid—A betterment in demand has featured this market for some days now and sales for quantity are reported to be on the increase. Foreign buyers have been placing many inquiries in the market and they are expected to place several good-sized orders in the near future. The tone of the market has been steady with prices for the most part remaining about unchanged. 28 per cent is quoted to-date at $3.12 to $3.37: $4.21 to $4.46 for 30 per cent and $7.11 to $7.36 for the 60 per cent.

Soda, Caustic—Increased activity has been noted in the market for Caustic Soda during the past ten days. Consumers in order to prepare for fall operations, many anticipating the coming season to be an exceptionally busy one, have been placing orders for large quantities of this item and dealers in the trade look for an advance in prices in the near future. Sellers are quoting sold 76 per cent at works in drums at $3.10 per 100 pound with ground and flake at $3.50.

Muriatic Acid—The tone of the market has continued to remain steady. Stocks on hand are still large but with new orders coming in from time to time dealers feel that these will be diminished considerably. Prices remain steady and unchanged from previous quotations with 18-degree quoted at from 80c to 90c per 100 pounds in tanks, works; and 20 degree at 90c to $1.

Reclaimed Rubber

NEW YORK, Sept. 2, 1924

General dullness and inactivity have featured this market during the past two weeks and dealers report prices unchanged from previous quotations. A resumption of activity is looked for soon.

Floating Tube	.13	@	.13⅛
Friction, uncured	.21	@	.22
Boots and Shoes (unwashed)	.09	@	.09¼
Boots and Shoes (washed)	.12½	@	.13
Mechanical	.09	@	.09½
Hose	.09½	@	.10
Tires, truck	.07⅝	@	.08
Tires, auto, black	.09	@	.09½
Black (washed)	.10	@	.10½
White	.13¼	@	.13¾
Dark Gray	.09¼	@	—
Light Gray	.10¾	@	—

Scrap Rubber

NEW YORK, Sept. 2, 1924

This market remains unchanged from our last issue, with prices quoted at the same level. Little interest has been displayed by buyers. Dealers claim this to be one of the dullest periods of the year.

Auto tire peelings	.01	@	.01¼
Standard White auto ton	20.00	@	22.00
Mixed auto ton	12.00	@	14.00
Bicycle tires ton	8.00	@	9.00
Clean solid truck tires	.01¼	@	.01½
Boots and shoes	.02¼	@	.02½
Arctics, untrimmed	.01	@	.01¼
Arctics, trimmed	.01⅜	@	.01⅝
Inner tubes, No. 1	.04	@	.04¼
Inner tubes, compounded	.02¼	@	.02½
Inner tubes, red	.02	@	.02¼
Battery jars, clean hard rubber	.02¼	@	.02½
Air Brake Hose ton	10.00	@	11.00
Rubber Hose ton	7.00	@	8.00

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REVIEW DESK

(Continued from Page 428)

low by means of a buying pool. (5) A movement has begun in the United States, both on the part of the Department of Commerce and the rubber industry to control our own rubber supply.

Copies of this study will be sent by the Illinois Merchants Trust Co. to anyone requesting them.

* * *

THE UTILISATION AND WASTE OF WOOD IN THE PREPARATION AND PACKING OF RAW RUBBER. By B. J. Eaton. Published in the June and July issue of *The Malayan Agricultural Journal.*

In 1919 it is estimated that the consumption of wood by rubber factories amounted to 219,774 tons in the Malay States. It is generally admitted that the smoking of rubber is not really necessary. It is done partly because "Fine Hard Para" from the Amazon is prepared by smoking, but chiefly to satisfy a prejudice of the London Market. The United States Rubber Co., with an output in Sumatra of 1,000,000 pounds a month, neither smokes its rubber nor packs it in wooden cases.

The use of bags for packing rubber would not effect a material saving as most of the wooden cases used are imported but if the large quantities of wood (mostly that of the rubber tree) now used for smoking were saved, part of it could be sold for domestic use and the demand on the forests would be correspondingly decreased. If rubber is smoked, oil might be used in some cases instead of wood.

It is doubtful whether the elimination of fuel entirely in the preparation of rubber is advisable. The only satisfactory method would be the preparation of thin pale crepe, which does not require artificial drying, or the conversion of such thin crepe, after natural drying, into a blanket or thick crepe. But the preparation of this grade only would not be advisable in view of the inferior quality of thin pale crepe and its slower rate of vulcanization.

The substitution of other fuels for wood in the preparation of smoked sheet is not possible because other fuels do not produce a similar product. However, a good "smoked" sheet could be prepared by "doping" either latex or freshly machined sheet with creosote products and then drying the sheet in hot air chambers heated by various kinds of fuel other than wood.

* * *

HOW TO ROUTE FREIGHT TO AND FROM INLAND POINTS IN THE UNITED KINGDOM. Published by the Cunard Steam Ship Company, Ltd., 26 Broadway, New York City. 36 pp.

This booklet should prove of value as a reference manual to shipping executives in the rubber industry. It comprises lists of cities in England, Ireland, Scotland and Wales having a population of more than 10,000 and more than 100,000 and gives the Metropolitan Boroughs of London, Port of London Authority Docks, and a description of Southampton to London Service. A map of the British Isles showing counties is also included. Copies will be furnished on application to the Cunard Steam Ship Company, Ltd.

* * *

CRAIN'S MARKET DATA BOOK AND DIRECTORY OF CLASS, TRADE AND TECHNICAL PUBLICATIONS. Published by G. D. Crain, Jr., 537 S. Dearborn St., Chicago, Ill. Fourth Edition, 1924. $5.

This volume is a valuable reference work not only on advertising but on industrial publishing. Indices to "Markets," "Advertisements," and "Publications" make the book easy to use. It contains facts and figures on production and consumption of practically every industry. When one opens this volume he cannot fail to realize that the business press is a powerful factor in industry.

A.S.C. RUBBER DIVISION NOW MEETING AT ITHACA

In conjunction with the 68th meeting of the American Chemical Society, the meeting of the Rubber Division is now in progress at Ithaca, having started September 8. The meeting of the society will adjourn September 13.

The program of the Rubber Division is somewhat shorter than usual. Abstracts of papers read follow:

E. P. Wightman and A. P. H. Trivelli. "Rubber Latex Particles." A sample of commercial para rubber latex preserved with ammonia has been examined by means of motion-picture microphotography. The particles of rubber were found to be liquid, to range in size from about 0.2 to 0.3μ to about 3 to 4μ in diameter, averaging about 0.7 to 0.8μ. They have strong Brownian motion and tend normally to assume spherical shape. They easily become deformed, however, due to their bombardment by the molecules of liquid surrounding them, to their own impacts, and to the local differences in surface tension. Some larger particles split into small ones, and smaller ones reform into larger ones. Our observations agree more or less with those of E. A. Hauser (*India Rubber Journal*, 58, 7 (1924), but go a step further, in that his work was done in a fixed static sample (set in gelatin) whereas ours were motion picture studies in free latex. (Illustrated with motion pictures.)

R. B. Stringfield. "The Mixing of Rubber Compounds." A discussion from the compounder's viewpoint of the factors affecting milling. Data are given on power consumption, milling temperatures, effect of roll sizes, speed, ratios, gage, etc. Economic considerations involved and some of the gaps in our present knowledge are pointed out.

Paul Beebe and R. B. Stringfield. "Plasticity Control in Rubber Mixing." The use of plasticity measurements in factory control is illustrated and the effect of variations in milling practice shown. Examples show large savings in milling time and in reduction of spoiled stock.

H. A. Winkelmann. "The Effect of Pigment Variability on the Physical Properties of Rubber Compounds." The variation in physical properties of a rubber compound which was repeatedly mixed and cured during a period of six months was greater than experimental error. A study was conducted on various pigments to determine the effect of source of a given pigment on the physical properties of a rubber compound. The effect of the source of pigments such as zinc oxide, carbon black, clay, mineral rubber, etc., was determined. The variation produced by some of the samples was too large to permit of direct substitution of one source for another. A closer cooperation between supplier and consumer will result in less variation and in the formulation of standards satisfactory to both parties.

Crude Rubber Imports Decrease

Imports of crude rubber into the United States during the month of July were 19,475 long tons, valued at $9,185,457, according to the Department of Commerce. These figures show a decrease from May and June totals. In May, 27,753 tons, valued at $14,304,261 were shipped to this country; in June 22,381 tons, valued at $11,254,247 were unloaded at American ports.

Crude rubber importations show a material decrease from those of 1923. For the first seven months of 1924 imports totaled 181,649 tons, valued at $96,593, compared with shipments of 215,595 tons, valued at $130,333,046 imported during the corresponding period last year.

A Correction

On page 211 of the June 25, 1924, issue of THE RUBBER AGE there appeared a photograph of a rubber flooring installation with the following caption: "Art Rubber Tile Recently Installed in the L. & D. Confectionery at Richmond, Va., by the Aeme Rubber & Flooring Co. of which E. P. Moore is president and T. Irving Bear, secretary." We have since learned that this flooring was installed by the Myers Rubber Co., Inc., of Richmond, Va. We are glad to make this correction in fairness to all concerned.

A Technical Course In

RUBBER MANUFACTURE

By PROF. H. E. SIMMONS, M.S.
Professor of Chemistry in the Municipal University of Akron, Ohio

This course was published serially in THE RUBBER AGE July, 1917, to July, 1918 and is now published in book form.

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ABSTRACTS

Effect of Serum Contents on Rubber

One of the most interesting questions in the coagulation of rubber is the effect of the serum contents on the properties of the crude rubber that is obtained from it and the vulcanized articles that are later manufactured from the crude product. This question is becoming of particular importance now that rubber latex is being imported into this country and used directly in the manufacture of rubber goods. An investigation was made to determine what effect these serum contents had on the raw rubber derived from Hevea latex, the results being published in the *Archief. voor de Rubbercultur,* volume 7, number 8.

It was found that the total weight of the rubber, which is obtained by the evaporation of the rubber latex, is from eight to ten per cent greater than that produced by the coagulation of the same latex. The rubber that is obtained by evaporation has approximately the same viscosity, in solution, as coagulated rubber, but it vulcanizes more rapidly and has a higher "slope." Washing only removes a portion of the additional solids.

The residue, that is obtained by evaporation of the serum which remains after the rubber latex has been coagulated with the aid of acetic acid, accelerates the vulcanization more than does the serum-residue that is obtained after the coagulation process, carried out with the aid of alcohol. The proportion of serum solids that is retained in the rubber has an important bearing on the relative effect of coagulation from diluted rubber latex and on the relative character of crepe and sheet rubber. Latex, which is diluted with water to give a fifteen per cent concentration of rubber, gives a more slowly vulcanizing rubber than the undiluted latex. Dilution of the latex with a solution of serum naturally does not have this retarding effect.

* * *

Accelerating Vulcanization of Rubber

An interesting process for accelerating the vulcanization of rubber is patented in British Patent No. 211,494. This process for accelerated vulcanization makes use of a mixture of rubber, an amine, a metal compound, a material providing sulphur, and carbon disulphide or oxysulphide. Two or three of these additions are mixed with the rubber, and the remainder are added by permeation from another medium without changing the shape of the rubber mass. The metal may be zinc, mercury, lead, cadmium, copper, arsenic or manganese, and suitable amines and derivatives of carbon disulphide. Some of the ingredients may be combined in a single compound, as for example, oxynormal butyl thiocarbonic disulphide (carbon disulphide and sulphur) and zinc butyl xanthogenate (zinc and carbon disulphide). In one example a sheet of rubber containing zinc oxide and sulphur is painted with dibenzylamine and carbon disulphide, and in another example, rubber containing zinc butyl xanthogenate and dibenzylamine is treated with a solution of sulphur.

* * *

Rubberized Paper

Loose or unwoven fibrous material, such as paper pulp, is incorporated with vulcanized latex and the vulcanized rubber is deposited on the fibers by evaporating the liquid or by adding a coagulant such as alum or acetic acid to the mixture. For example a paper composition comprising pulp containing 2.25 per cent of dry fiber and ten per cent of its weight of rosin size is mixed with a quantity of the vulcanized latex containing one per cent of rubber. This is calculated on the weight of dry fiber in the pulp. Sufficient alum is added to precipitate the size and to coagulate the latex, and the pulp is worked up to paper in the usual manner. Higher proportions of the rubber latex may be added if stronger paper is required. British Patent No. 210,526.